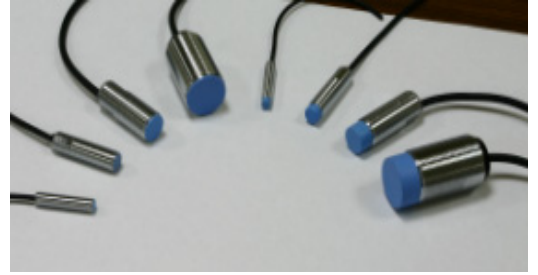


## FEATURES

- Easy installation, high-speed pulse generator, high-speed rotation control, and more.
- A wealth of models ideal for limit control, counting control, and other applications.
- Sensing distance from 1~2/2 ~ 6/ 5~ 12/10~18mm
- Housing by PBT with strong structure and acid resisting available.

## APPLICATIONS

RPM and Linear line speed detection      Counting Control  
Limit Control



## ORDERING INFORMATION

LBSP142 - Material - Model - Sensing distance - Output Configuration - Operation Mode - Length of wire

CODE	MATERIAL	(NON-FLUSH)	MODEL (FLUSH)	CODE	SENSING DIST.	CODE	OUTPUT CONF.	CODE	OPERAT. MODE	CODE	LENGTH OF WIRE
P	PBT 12,18,30	8	8	01	1.0mm	N	NPN	NO	Normal Open	20	Pre-wire 2 M
C	Cooper 08,12,18,30	12	12	02	2.0mm	P	PNP	NC	Normal Close	XX	Pre-wire X M (Specified)
		18	18	03	3.0mm	A	AC 2-WIRE			PC	Plug In Connector
		30	30	04	4.0mm	D	DC 2-WIRE			M12	M12 Connector
				05	5.0mm						
				06	6.0mm						
				07	7.0mm						
				08	8.0mm						
				10	10.0mm						
				12	12.0mm						
				15	15.0mm						
				18	18.0mm						

PBT				
	12	18	30	
Flush	2~4 mm	5~7 mm	10~12 mm	
Non-Flush	4~6 mm	8~12 mm	15~18 mm	

COOPER WITH NICKEL-PLATING				
	8	12	18	30
Flush	1 mm	2~4 mm	5~7 mm	10~12 mm
Non-Flush	2 mm	4~6 mm	8~12 mm	15~18 mm

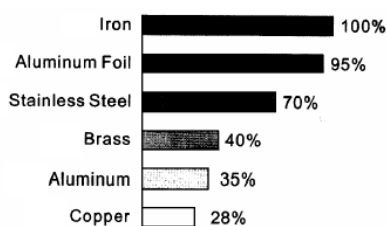
## TECHNICAL SPECIFICATION

MODEL	LBSP142-08(Cooper)		LBSP142-12(Normal/Long distance)			
Flush / Non-Flush	Flush	Non-Flush	Flush		Non-Flush	
<b>Set distance</b>	1mm±10%	2mm±10%	2mm±10%	Long: 4mm±10%	4mm±10%	Long: 6mm±10%
<b>Sensing distance</b>	0~0.8mm	0~1.6mm	0~1.6mm	Long: 0~3.2mm	0~3.2mm	Long: 0~4.8mm
<b>Detection direct.</b>	Front side					
<b>Differential travel</b>	10% max. of sensing distance					
<b>Detectable object</b>	Ferrous metal (The sensing distance decreases with non-ferrous metal.)					
<b>Standard sensing object</b>	Iron, 8 × 8 × 1mm		Iron, 12 × 12 × 1mm			
<b>Operation mode (with sensing object approaching)</b>	O : Normal Open C : Normal Close		O : Normal Open C : Normal Close			
<b>Detection indicator</b>	Red LED					
	DC 3-WIRE		DC 3-WIRE	DC 2-WIRE	AC 2-WIRE	
<b>Load current</b>	150mA Max.		150mA Max.	3~150mA	5~100mA	
<b>Power supply</b>	DC10~30V, ripple (p-p): 10% max.				AC 24~240V	
<b>Leakage current</b>	<13mA		<13mA	<0.8mA	<13mA	
<b>Protection circuits</b>	DC 3 wire / DC 2 wire: Reverse polarity protection, Surge suppressor				AC 2 wire: Surge suppressor	
<b>Response freq.</b>	800Hz		800Hz, Option: 1KHz	800Hz	800Hz, Option: 1KHz	
<b>Ambient temp.</b>	Operating: -25°C ~ 70°C; Storage: -30°C ~ 80°C (Non-condensing)					
<b>Ambient humidity</b>	Operating: 35 to 95 % RH; Storage: 35 to 95 % RH					
<b>Temp. influence</b>	10% max. of sensing distance at 23C in the temperature range of 25 to 70C					
<b>Voltage influence</b>	1% max. of sensing distance at rated voltage in rated voltage 15% range					
<b>Insulation resistance</b>	50 M min. (at 500 VDC) between current-carrying parts and case					
<b>Dielectric strength</b>	DC 3-wire: 1,000 VAC for 1 min between current-carrying parts and case					
<b>Vibration</b>	10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions					
<b>Shock resistance</b>	500 m/s <sup>2</sup> (about 50g) 3 times each in X, Y, and Z directions					
<b>Protection</b>	IEC 60529 IP67 [JEM IP67g (water-resistant, oil-resistant)]					
<b>Connection method</b>	Pre-wir		DC 3-wire / DC 2-wire: 3C / 3.8 Ø * 2M PVC; oil-resistant; AC 2-wire: 2C/4.8 Ø * 2M PVC;			
	Plug con.		Available			
<b>Weight</b>	Pre-wir		Cooper: 39g PBT: 54g			
	Plug con.		Cooper: 57g PBT: 56g			
<b>Materials</b>	Case		Cooper with Nickel-plating PBT; Blue color, Cooper with Nickel-plating			
	Sensing surface		PBT; Blue color, PBT; Blue color,			
	Screw		Cooper with Nickel-plating PBT; Blue color, Cooper with Nickel-plating			
	Bracket		Iron with Nickel-plating			

MODEL	LBSP142-18				LBSP142-30			
Flush / Non-Flush	Flush		Non-Flush		Flush		Non-Flush	
Set distance	5mm±10%	Long: 7mm±10%	8mm±10%	Long: 12mm±10%	10mm±10%	Long: 12mm±10%	15mm±10%	Long: 18mm±10%
Sensing distance	0~4.0mm	Long: 0~5.6mm	0~6.4mm	Long: 9.6mm±10%	0~8.0mm	Long: 0~9.6mm	0~12mm	Long: 14.4mm±10%
Detection direct.	Front side							
Differential travel	10% max. of sensing distance							
Detectable object	Ferrous metal (The sensing distance decreases with non-ferrous metal.)							
Standard sensing object	Iron, 18×18×1mm				Iron, 30×30×1mm			
Operation mode (with sensing object approaching)	O : Normal Open C : Normal Close							
Detection indicator	Red LED							
	DC 3-WIRE	DC 2-WIRE	AC 2-WIRE	DC 3-WIRE	DC 2-WIRE	AC 2-WIRE	DC 3-WIRE	DC 2-WIRE
Load current	150mA max	3~150mA	3~150mA	150mA max	3~150mA	3~150mA	150mA max	3~150mA
Power supply	DC10~30V, ripple (p-p): 10% max.		AC 24~240V	DC10~30V, ripple (p-p): 10% max.		AC 24~240V	DC10~30V, ripple (p-p): 10% max.	
Leakage current	<13mA	<0.8mA	<1.7mA(at AC200V)	3~1<13mA	<0.8mA	<1.7mA(at AC200V)	3~1<13mA	<0.8mA
Protection circuits	DC 3 wire / DC 2 wire: Reverse polarity protection, Surge suppressor				AC 2 wire: Surge suppressor			
Response freq.	500Hz		30Hz	500Hz		30Hz	500Hz	
Ambient temp.	Operating: -25°C ~ 70°C; Storage: -30°C ~ 80°C (Non-condensing)							
Ambient humidity	Operating: 35 to 95 % RH; Storage: 35 to 95 % RH							
Temp. influence	10% max. of sensing distance at 23C in the temperature range of 25 to 70C							
Voltage influence	1% max. of sensing distance at rated voltage in rated voltage 15% range							
Insulation resistance	50 M min. (at 500 VDC) between current-carrying parts and case							
Dielectric strength	DC 3-wire: 1,000 VAC for 1 min between current-carrying parts and case							
Vibration resistance	10 to 55 Hz, 1.5-mm double amplitude for 2 hours each in X, Y, and Z directions							
Shock resistance	500 m/s <sup>2</sup> (about 50g) 3 times each in X, Y, and Z directions							
Protection	IEC 60529 IP67 [JEM IP67g (water-resistant, oil-resistant)]							
Connection method	Pre-wire DC 3-wire / DC 2-wire: 3C / 3.8 Ø * 2M PVC; oil-resistant;				AC 2-wire: 2C/4.8 Ø * 2M PVC; oil-resistant			
Weight	Pre-wire	Cooper: 118g PBT: 89g		Cooper: 185g PBT: 126g		Cooper: 187g PBT: 128g		
	Plug con.	Cooper: 122g PBT: 91g		Cooper: 185g PBT: 126g		Cooper: 187g PBT: 128g		
Materials	Case	PBT; Blue color, Cooper with Nickel-plating						
	Sensing surface	PBT; Blue color,						
	Screw	PBT; Blue color, Cooper with Nickel-plating						
	Bracket	Iron with Nickel-plating						

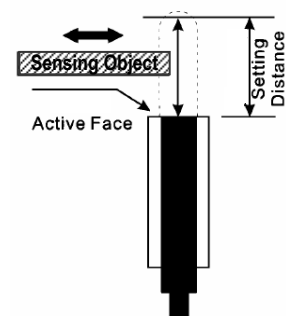
## SENSING OBJECT MATERIAL

Taking an electrical proximity switch's an example; the sensing distance of the electrical inductive proximity switch is shorter for a non-metal target. In this case, please refer to the following chart for correction of pick up distance.



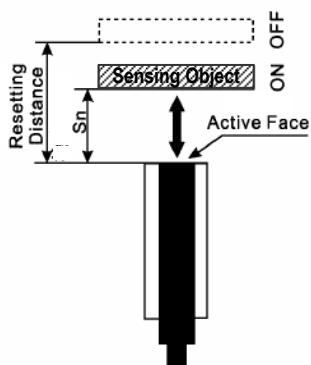
## SETTING DISTANCE

Setting distance refers to the distance from the sensing surface to the passing position of the target which permits the proximity switch to operate without any malfunction due to temperature or voltage fluctuation.



## SENSING DISTANCE

Sensing distance refers to the distance at the proximity switch operates (or releases) as measured from the reference position (or reference plane) by moving the target in the specified manner.



## STANDARD OBJECT

**Standard Object:**

DIN Steel 37 with thickness of 1mm. One side of square equals length of proximity switch diameter.

**Smaller than standard**

The sensing distance is comparatively shorter and the distance is set according to the actual object.

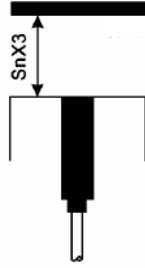
**Larger than standard**

The distance detected out shall not be changed.

## ■ INSTALLATION PRECAUTIONS

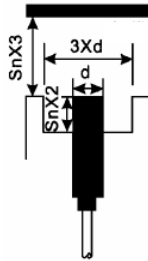
### ● Flush Type

Since the sensing face of the proximity switch is a flush type, it can be buried in an iron or steel material stockpile to prevent being effected by surrounding metal objects.



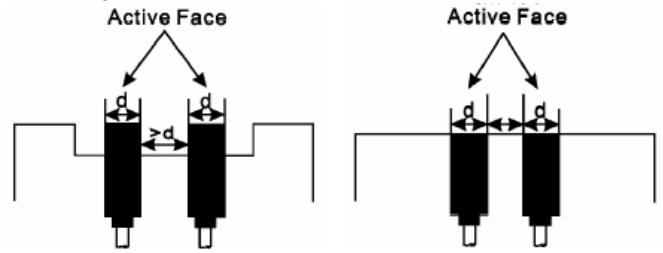
### ● Non-Flush Type

A space should be provided between the sensing face and the surrounding metals, or the sensing face should protrude to prevent surrounding interference.



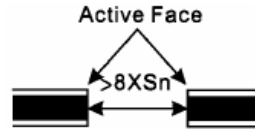
### ● Mutual Interference

A minimum distance must be observed when identical cylindrical rectangular sensors are mounted opposite each other or in parallel.



Non-Flush mountable sensors mounted in parallel

Flush mountable sensors mounted in parallel

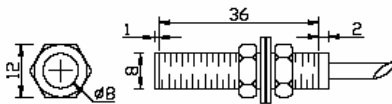


Mounted opposite each other

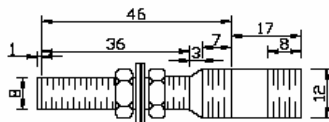
## ■ DIMENSIONS

LBSP142-08(Coope)

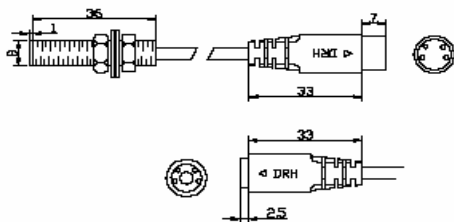
### Flush Type



Pre-wired

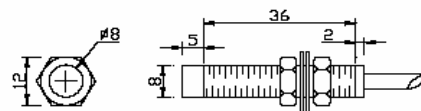


M12 Connector

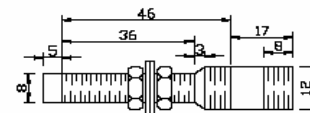


Plug in Connector

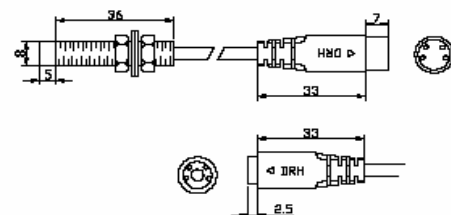
### Non-Flush Type



Pre-wired

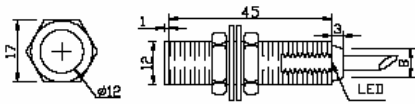


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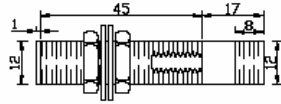


Plug in Connector

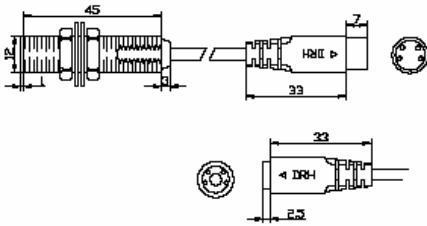
Flush Type



Pre-wired

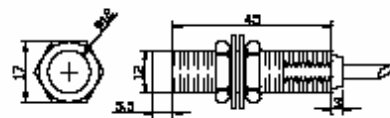


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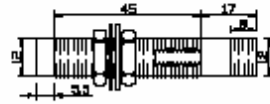


Plug in Connector

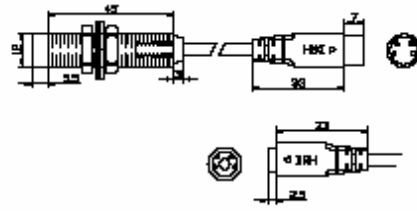
Non-Flush Type



Pre-wired

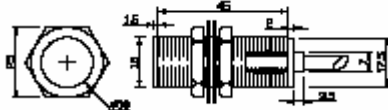


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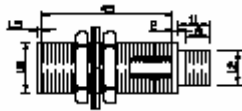


Plug in Connector

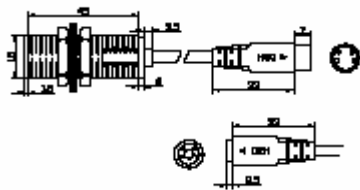
Flush Type



Pre-wired

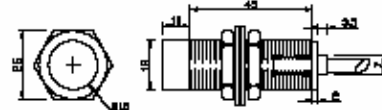


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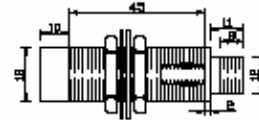


Plug in Connector

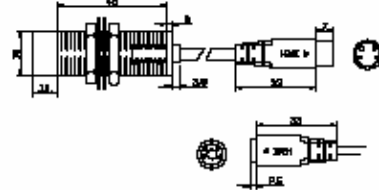
Non-Flush Type



Pre-wired

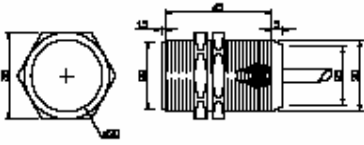


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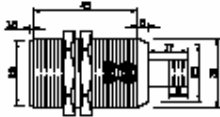


Plug in Connector

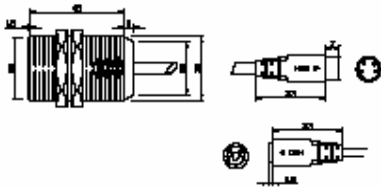
Flush Type



Pre-wired

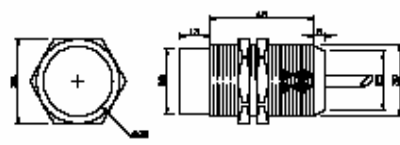


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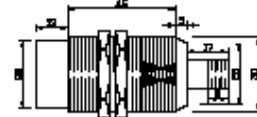


Plug in Connector

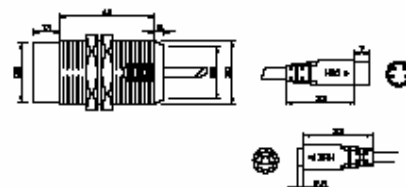
Non-Flush Type



Pre-wired

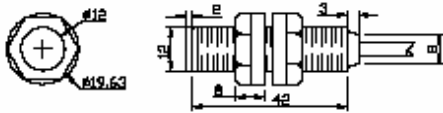


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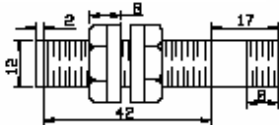


Plug in Connector

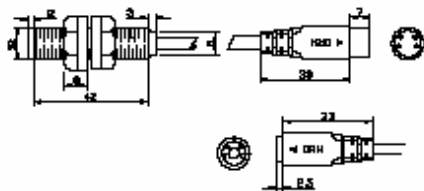
Flush Type



Pre-wired

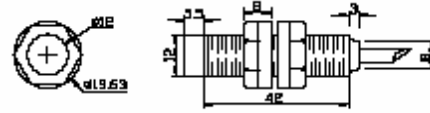


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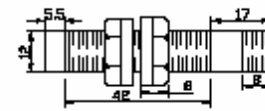


Plug in Connector

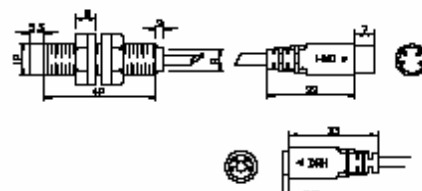
Non-Flush Type



Pre-wired



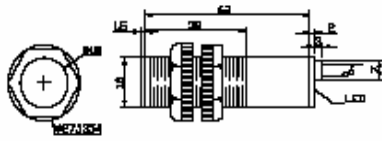
M12 Connector



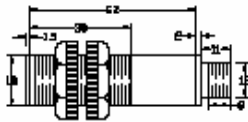
Plug in Connector

**LBSP142-18(PBT)**

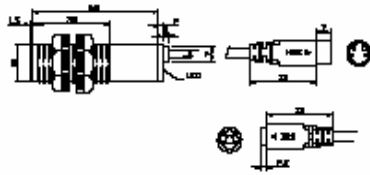
**Flush Type**



**Pre-wired**

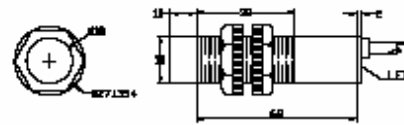


**M12 Connector**

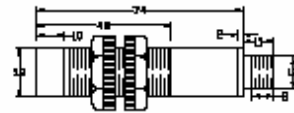


**Plug in Connector**

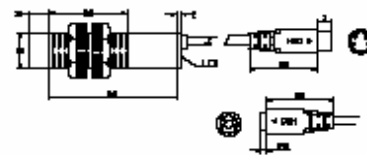
**Non-Flush Type**



**Pre-wired**



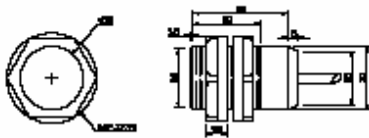
**M12 Connector**



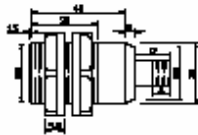
**Plug in Connector**

**LBSP142-30(PBT)**

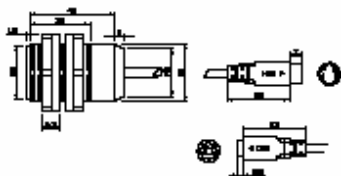
**Flush Type**



**Pre-wired**



**M12 Connector**

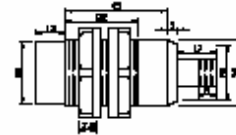


**Plug in Connector**

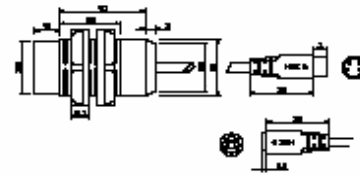
**Non-Flush Type**



**Pre-wired**



**M12 Connector**

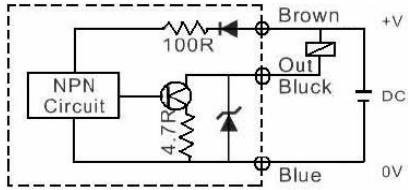


**Plug in Connector**

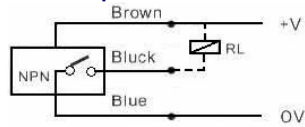
## CONNECTION

### DC 3-WIRE

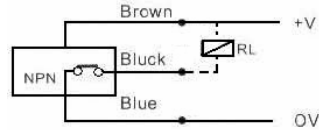
#### NPN NO/NC



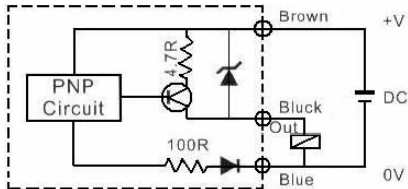
#### Normal Open



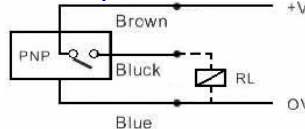
#### Normal Close



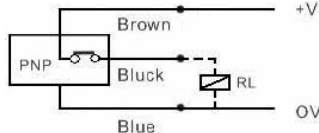
#### PNP NO/NC



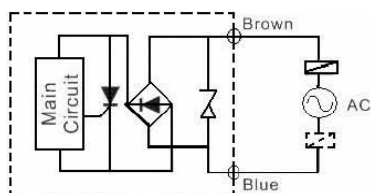
#### Normal Open



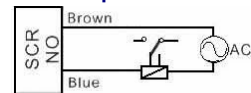
#### Normal Close



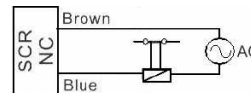
### AC 2 wire type



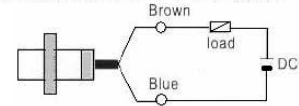
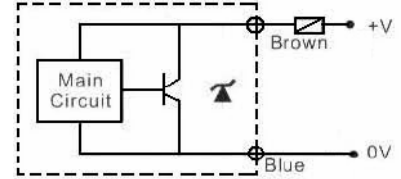
#### Normal Open



#### Normal Close



### DC 2 wire type



or

