



C-Lin
欣灵电气

Product Instruction

C-Lin

欣灵电气股份有限公司
Xinling Electrical Co., Ltd.

Address: No. 328, Weijiu Road, Economic Development Zone, Yueqing City, Zhejiang Province

Hotline: 0577-62735555 Fax: 0577-62722963 Technical consultation: 0577-62731237

Http://www.xinling.com www.c-lin.cn www.clin-ele.com

Email: xl@xinling.com qbx@xinling.com

LJM Series

Short Cylindrical Inductive Proximity Switch

Thank you very much for using the C-Lin brand inductive proximity switch. Please read the instruction manual before using the product!

I. Description



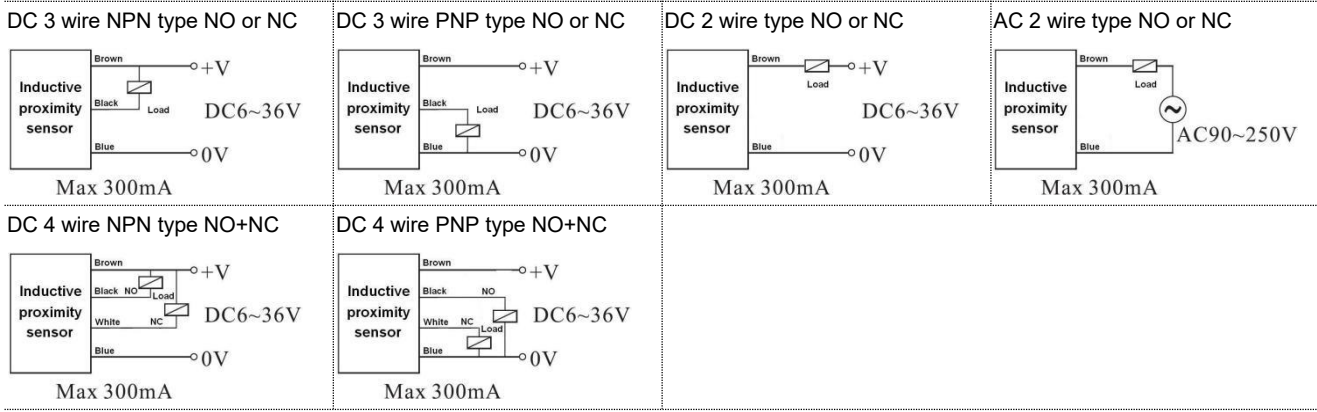
II. Specification

Sensing object	Ferrous metal: Iron, copper, steel, aluminium, nickel and so on.
Differential travel	10% max. of sensing distance
Power Supply Voltage	DC(NPN, PNP, 2-wire) type: DC12-24V ripple(p-p): 10% max. AC type: 90-250V 50/60Hz
Current consumption	DC(NPN, PNP, 2-wire) type: 8mA/12V, 15mA/24V AC type: 5mA max.
Control output	DC(NPN, PNP) type: 300mA max. DC(2-wire) type: 3-100mA max. AC type: 10-300mA max.
Protection circuits	DC(NPN, PNP, 2-wire) type: Load short-circuit protection AC type: Surge suppressor
Ambient temperature	-25 to 65°C (with no icing)
Ambient humidity	35% to 95% RH
Temperature influence	±15% max. of sensing distance at 23°C in the temperature range of -25 to 65°C
Voltage influence	±15% max. of sensing distance at rated voltage in the rated voltage ±15% range
Residual voltage	DC(NPN, PNP) type: 1V max. DC(2-wire) type: 3V max. AC(2-wire) type: 7V max.
Insulation resistance	50mΩ min. (at 500VDC) between current-carrying parts and case(Load current: 100mA max., Cable length: 2m)
Dielectric strength	DC(NPN, PNP, 2-wire) type: 1,000VAC, 50/60Hz for 1 minute between current-carrying parts and case AC(2-wire) type: 2,000VAC, 50/60Hz for 1 minute between current-carrying parts and case
Vibration resistance	Destruction : 10 to 55Hz, 1.5mm double amplitude for 2 hours each in X, Y, and Z directions
Shock resistance	Destruction : 500m/s(about 50g) 10 times each in X, Y, and Z directions
Degree of protection	IP54~IP67
Materials	Case: Nickel-plated brass Sensing surface: Heat-resistant ABS

III. Model

Model			LJM8 series		LJM12 series		LJM18 series		LJM30 series	
Installation			Flush	Non-flush	Flush	Non-flush	Flush	Non-flush	Flush	Non-flush
DC type	NPN	NO	LJM8-1.5N1	LJM8M-2N1	LJM12-2N1	LJM12M-5N1	LJM18-5N1	LJM18M-10N1	LJM30-10N1	LJM30M-18N1
		NC	LJM8-1.5N2	LJM8M-2N2	LJM12-2N2	LJM12M-5N2	LJM18-5N2	LJM18M-10N2	LJM30-10N2	LJM30M-18N2
		NO+NC	/	/	LJM12-2N4	LJM12M-5N4	LJM18-5N4	LJM18M-10N4	LJM30-10N4	LJM30M-18N4
	PNP	NO	LJM8-1.5P1	LJM8M-2P1	LJM12-2P1	LJM12M-5P1	LJM18-5P1	LJM18M-10P1	LJM30-10P1	LJM30M-18P1
		NC	LJM8-1.5P2	LJM8M-2P2	LJM12-2P2	LJM12M-5P2	LJM18-5P2	LJM18M-10P2	LJM30-10P2	LJM30M-18P2
		NO+NC	/	/	LJM12-2P4	LJM12M-5P4	LJM18-5P4	LJM18M-10P4	LJM30-10P4	LJM30M-18P4
2 wire	NO	LJM8-1.5D1	LJM8M-2D1	LJM12-2D1	LJM12M-5D1	LJM18-5D1	LJM18M-10D1	LJM30-10D1	LJM30M-18D1	
	NC	LJM8-1.5D2	LJM8M-2D2	LJM12-2D2	LJM12M-5D2	LJM18-5D2	LJM18M-10D2	LJM30-10D2	LJM30M-18D2	
AC type	2 wire	NO	/	/	LJM12-2A1	LJM12M-5A1	LJM18-5A1	LJM18M-10A1	LJM30-10A1	LJM30M-18A1
		NC	/	/	LJM12-2A2	LJM12M-5A2	LJM18-5A2	LJM18M-10A2	LJM30-10A2	LJM30M-18A2
Sensing distance			1.5mm±10%	2mm±10%	2mm±10%	5mm±10%	5mm±10%	10mm±10%	10mm±10%	18mm±10%
Response frequency	DC	DC	1.5KHz	0.8KHz	0.8KHz	0.4KHz	0.4KHz	0.2KHz	0.2KHz	0.1KHz
		AC	25Hz		25Hz		25Hz		25Hz	

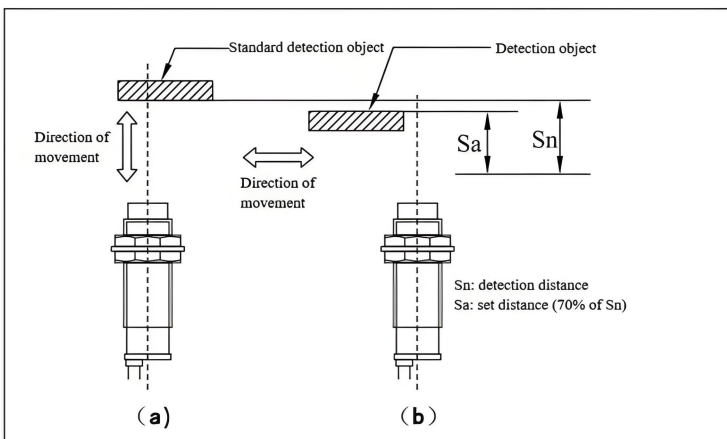
IV. Wiring Diagram



V. Dimension(mm)

Type	Model	a	b	c	d	e	f	g
Flush	LJM8 series	32±0.5	32±0.5	-	3.5	M8×1	12	(15)
Non-flush	LJM8M series	37±0.5	34±0.5	5				
Flush	LJM12 series	45±0.5	30±0.5	-	4	M12×1	17	(21)
Non-flush	LJM12M series	45±0.5	25±0.5	5				
Flush	LJM18 series	52±0.5	30±0.5	-	4	M18×1	24	(30)
Non-flush	LJM18M series	60±0.5	30±0.5	8.5				
Flush	LJM30 series	60±0.5	40±0.5	-	4.7	M30×1.5	36.2	-
Non-flush	LJM30M series	63±0.5	30±0.5	12.5				

VI. Setting distance and detection distance



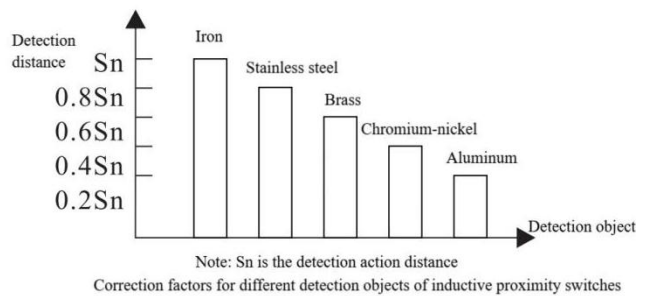
1) Please set the switch action distance within 70% of the standard action distance (S_n) to prevent the switch operation from being affected by temperature, voltage, etc.

2) Detection distance: Detect the object according to the specified method, from the reference position (reference surface) to the measured action (reset).

3) Set distance (S_a):
 $S_a = (S_n) \times 70\%$
 Example: LJM18M-10N1
 $S_a = 10\text{mm} \times 0.7 = 7\text{mm}$

VII. Relationship between the material of the detected object and the detection distance

- When detecting different objects, the switch has different action distances. Please refer to the correction coefficients of different detection objects of the inductive proximity switch in the figure on the right.
- When the switch is used to measure the action frequency or in high-speed occasions, please set the action distance of the switch to 1/2 of the standard action distance. The switch can obtain the maximum action frequency at this position.



VIII. Incorrect usage status description

- Please do not use it in open air environment or where it is splashed with water, and try to avoid using it outdoors.
- Please do not run the wires in the same pipe with power lines or dynamic power lines. They should be wired separately.
- Please do not pull the power cord of the proximity switch with force.
- Please do not hit the detection surface with hard objects.
- Please do not use the proximity switch in places with corrosive substances.
- Please do not use strong force to tighten, please add pads when tightening.

IX. Proximity switch requirements for power supply and load

1. This product cannot be used when the power moment is turned on (within 100ms);
2. Surge protection: When the proximity switch is used near surge interference (such as welding operation of electric welder), please add surge absorption device;
3. When connecting a large current load (such as a light bulb or motor), the initial resistance will decrease due to the impact of the current. Only when the current increases, the load resistance increases and the current returns to normal. In this case, the current impact will damage the proximity switch. Please use a small relay to convert and protect the proximity switch;
4. The proximity switch cannot be powered by an autotransformer, but an isolation transformer should be used;
5. The connection line of the proximity switch should be as short as possible to reduce interference;
6. The power line of the AC/DC two-wire proximity switch cannot be directly connected to the power supply, but must be connected in series with the load, otherwise the proximity switch will be damaged.

X. Maintenance and repair

To ensure long-term stable operation of the proximity switch, please perform the following regular inspections, just like general controllers:

1. Check whether the detection object and the installation position of the proximity switch are offset, loose, or deformed.
2. Check whether the wiring and connection parts are loose, have poor contact, or are broken.
3. Check whether there are deposits such as metal dust attached to the detection surface.
4. Check whether the operating temperature and ambient conditions are abnormal.

