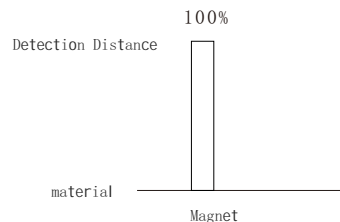


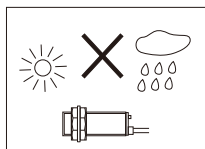
VII. Relationship between the Material of the Detected Object and Detection Distance

The standard detected object shall be confirmed by measuring the detection distance x (mm), considering the influences caused by its shape, size, material, or various coatings.

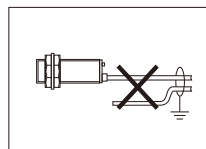


Note: The Hall element type with “-N” can only detect the N pole of a magnet. If a magnet cannot be detected, please reverse the direction of the magnet first.

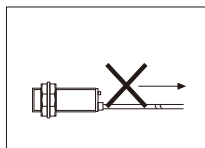
VIII. Instructions for Incorrect Usage



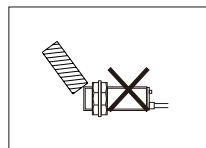
Do not use in open-air environments or places with water splashing, and try to avoid outdoor use as much as possible.



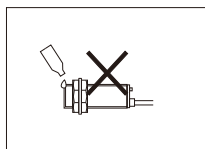
Do not route together with power lines or power cables in the same conduit; separate wiring should be used.



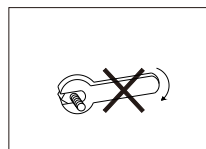
Do not pull the power cord of the proximity switch with great force.



Do not strike the detection surface with hard objects.



Do not use the proximity switch in places with corrosive substances.



Do not use the proximity switch in places with corrosive substances.

IX. Requirements for Proximity Switches on Power Supply and Load

1. This product must not be used at the moment when the power supply is turned on (within 100ms).
2. Surge protection: When the proximity switch is used near places with surge interference (such as welding operations of electric welders), please add an additional surge absorption device.
3. When connecting a load with large current (such as a light bulb or a motor), the initial resistance decreases due to the impact of the current. Only when the current increases, the load resistance increases and the current returns to normal. The current impact in this case will damage the proximity switch. Please use a small relay for conversion to protect the proximity switch.
4. Proximity switches cannot be powered by autotransformers; isolation transformers should be used.
5. The connecting wires of the proximity switch should be as short as possible to reduce interference.
6. The power cord of AC/DC two-wire proximity switches must not be directly connected to the power supply; a load must be connected in series, otherwise the proximity switch will be damaged.

X. Maintenance and Inspection

To ensure the long-term stable operation of the proximity switch, similar to general controllers, please conduct the following regular inspections:

1. Check whether the installation positions of the detected object and the proximity switch are displaced, 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 adherent metal dust on the detection surface.
4. Check whether the operating temperature and surrounding environmental conditions are abnormal.

XI. Environmental Protection and Other Legal Regulations

To protect the environment, when this product or its components are scrapped, please properly dispose of them as industrial waste; or hand them over to a recycling station for classified dismantling, recycling, and reuse in accordance with relevant national regulations.

XII. Order Instructions (Standard Cable Length: 1.5 Meters)

1. SJM12-10N1: 1.5 meters, 100 pieces;
2. SJM18-10N1: 1.5 meters, 100 pieces.

4



欣灵电气股份有限公司
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技术咨询: 400-8236-775



产品合格证

产品合格证

符合标准: GB/T 14048.10

检验员: 检07

出厂日期: 见产品或包装

本产品经检验合格,准予出厂。

C-Lin 欣灵电气股份有限公司
XINLING ELECTRICAL CO., LTD.



欣灵

使用说明书
Products Instructions

SJM/FC-1/YG-1

Magnetic Proximity Switch

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

16A009S1



RECYCLABLE

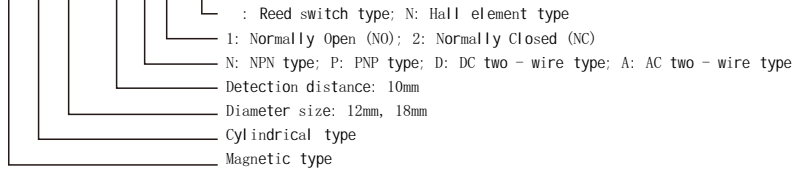
. Overview

A proximity switch is a displacement sensor with switching output. It features outputs such as NPN, PNP, normally open, normally closed, and relay. It can detect transparent and opaque objects like metals (e.g., iron, steel, copper), plastics, glass, wood, water, paper, and magnets. It can be connected to PLCs, servo controllers, frequency converters, counters, and controllers to realize automatic signal input, and is widely used in industries including machinery, textiles, light industry, papermaking, printing, and packaging.

Inductive proximity switches detect metallic objects (e.g., iron, steel, copper, etc.);
 Capacitive proximity switches detect any objects (e.g., glass, metals, plastics, water, oil, paper, etc.);
 Magnetic proximity switches detect magnetic metals (e.g., magnets);
 This series of magnetic proximity switches complies with the GB/T14048.10 standard.

. Model Description

SJM12-10N1-N



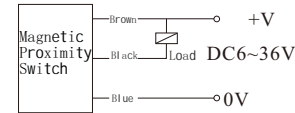
Note: The "-N" type is preferred in vibration environments. The "-N" type can only detect the N pole of a magnet. If the magnet cannot be detected, please reverse the direction of the magnet first.

. Model Types and Technical Data

Type		SJM12 Series		SJM18 Series		FC-1	YG-1	
DC Type	NPN	NO	SJM12-10N1	SJM12-10N1-N	SJM18-10N1	SJM18-10N1-N	/	/
		NC	SJM12-10N2	SJM12-10N2-N	SJM18-10N2	SJM18-10N2-N	/	/
	PNP	NO	SJM12-10P1	SJM12-10P1-N	SJM18-10P1	SJM18-10P1-N	/	/
		NC	SJM12-10P2	SJM12-10P2-N	SJM18-10P2	SJM18-10P2-N	/	/
	Two-wire	NO	SJM12-10D1	SJM12-10D1-N	SJM18-10D1	SJM18-10D1-N	FC-1	/
		NC	SJM12-10D2	SJM12-10D2-N	SJM18-10D2	SJM18-10D2-N	/	/
AC Two-wire Type	NO	SJM12-10A1	SJM12-10A1-N	SJM18-10A1	SJM18-10A1-N	/	/	
	NC	SJM12-10A2	SJM12-10A2-N	SJM18-10A2	SJM18-10A2-N	/	/	
AC-DC Relay NO+NC		/	/	/	/	/	YG-1	
Detection Distance		10mm ± 15%				8mm ± 15%	15mm ± 15%	
Standard Detection Object		Permanent magnet φ12×2mm				A3 iron 30×68×1mm		
Response Frequency	AC	0.3kHz				5Hz		
	DC	25Hz				5Hz		
Detectable Objects		Magnets, Magnetic Metals						
Differential Distance		Within 10% of the detection distance						
Power Supply Voltage		DC type: Rated voltage DC10~30V (operating voltage range DC6~36V) AC type: Rated voltage AC110~220V (operating voltage range AC90~250V)						
Operating Current		Load current of DC two-wire type 100mA, other models 200mA; Quiescent current <10mA						
Residual Voltage		DC (NPN, PNP) type: 1.5V; DC two-wire: 4V; AC two-wire: 7V (@100mA load, wire length 2m)						
Protection Circuit		DC type: Polarity protection; AC type: Surge absorption protection						
Ambient Temperature Range		Working: -25~+70 (no icing, no condensation); Storage: -40~+85 (no icing, no condensation)						
Ambient Humidity Range		Working, Storage: 35~95% (no condensation)						
Temperature Influence (Temperature Drift)		Within the temperature range of -25~+70, the detection distance is within ±15% of the detection distance at +23						
Voltage Influence		When the power supply voltage is within ±15% of the rated power supply voltage, the change of detection distance is within ±15%.						
Insulation Resistance		Above 50MΩ, between the entire live part and the housing (measured with a DC500V megohmmeter).						
Withstand Voltage		DC (NPN, PNP, two-wire) type: AC1000V, 50/60HzAC (two-wire) type: 2000V, 50/60Hz, 1 minute between the live part and the housing						
Vibration		Endurance: 10~55Hz (double amplitude 1.5mm), 2 hours for each of X, Y, Z directions.						
Impact		Endurance: 500m/s ² (approx. 50g), 10 times for X, Y, Z directions.						
Protection Structure		IP67				IP54		
Housing Material		SJM12, SJM18 series, FC-1: Brass with nickel plating; YG-1: Heat-resistant ABS						
Detection Surface Material		Heat-resistant ABS						

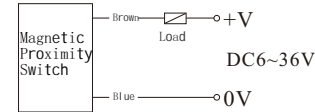
IV. Classification by Output Form

1. DC 3-wire NPN Type



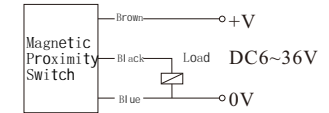
Max 200mA

2. DC 2-wire Type



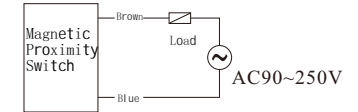
Max 100mA

2. DC 3-wire PNP Type



Max 200mA

4. AC 2-wire Type

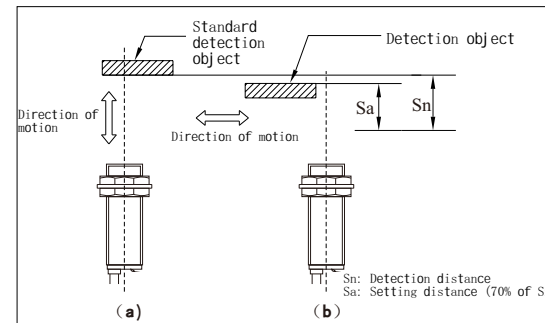


Max 200mA

V. Outline Dimension Drawings (Unit: mm)

Outline Dimensions of SJM12 and SJM18 Series					
		Dimension Code			
		a	b	c	d
M12×1		53±0.5	47±0.5	4	17
M18×1		62±0.5	53±0.5	4	24
Outline Dimensions of FC-1			Outline Dimensions of YG-1		

VI. Setting Distance and Detection Distance



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

2) Detect the object according to the specified method; it refers to the distance from the reference position (reference surface) to the measured action (reset).

3) Setting distance (Sa):

$$Sa = (Sn) \times 0.7$$

Example: SJM12-10N1

$$Sa = 10\text{mm} \times 0.7 = 7\text{mm}$$