

# INSTRUCTION MANUAL OF PROXIMITY SWITCH

## INSTRUCTION BOOK

**■ Cautions when using the switch**

- Please do not use autotransformer. DC power supply must use insulated transformer.
- It is strictly forbidden to connect on live line. Wire must be connected strictly according to the color code on the connection diagram.
- If there is an electric line of force, and when the power line passes near the switch lead, the metal pipe should be covered on the switch lead and grounded to protect the switch from mis-operation and damaging.

**● AC switch, DC two-line system switch must pass load to connect switch power supply. If directly connect the switch with power supply, the switch will be damaged.**

**● The length of the leading wire of the proximity switch should be shorter than 200mm for fearing of the voltage drop will be too big to bear.**

**■ Instruction for capacitance proximity switch.**

The capacitance proximity switch can be used to check metal, plastic, glass, water and other substances. Because of the conductivity, water absorption and volume of all kinds of detecting objects are different, the corresponding detected distances are different, too. The sensing distance varies depending on the metal being detected.

**● Different detecting objects and detecting distances.**

- To avoid mis-operation, the capacitance proximity switch is not suitable for installing near high frequency electric field, such as near high frequency welder, supersonic generator and so on. The operating distance of the capacitance proximity switch generally can be adjusted according to different detecting objects. Therefore, when installing, it should be adjusted. Please refer to the following steps for the adjustment method:

**(A)** Operating indicator light  
**(B)** Stop at ON  
**(C)** Stop at ON  
**(D)** ON  
Operating distance setting position  
OFF

**A.** When the supersonic generator is rotated to the right, the detecting distance will enlarge and when it is rotated to the left, it will lessen. The adjustment revolution is 10 circles.

**B.** The potentiometer should be rotated slowly to the right when the sensor is not detecting. Do not stop until it turns to the position of ON in the proximity switch.

**C.** When closing to the detecting object, the potentiometer should be rotated to the left. Do not stop until it turns to the position of OFF in the proximity switch.

**D.** The adjustment of operating distance is end when the potentiometer is between ON and OFF.

**Installation demand**

When installing the proximity switch, please install it larger than the diameter in the diagram if there is metal around of when the switch is placed opposite of parallel. So that the reliable operation will not be affected.

**Diagram: Rated operating distance**  
**d: Diameter of inductive surface**

For example: LM18-3005 NA  
The above switch is inductance type proximity switch. M18 refers to cylinder's diameter is 18mm, 30 stands for DC6-36V, 05 indicates the detective distance is 5mm. N stands for NPN negative logic and A is NO output.

- Please set the operating distance of the switch within 80% of standard operating distance to protect the switch from being affected by temperature and voltage.
- When detecting different metals, the switch has different operating distances (Diagram 1).
- When the switch is used for measuring operating frequency or used in high-speed places, please set the operating distance of the switch within 1/20 of standard operating distance. Under this condition, the switch can reach max operating frequency.
- Please refer to the instruction manual of capacitive proximity switch when setting its operating distance.

**Ratio of inducting different materials**

**Effect that the size of the detecting object to the detecting distance**

**Switching frequency:**

Diameter	Voltage	Frequency	Voltage	Frequency
8mm	AC	500HZ	DC	1500HZ
12mm	AC	400HZ	DC	1000HZ
18mm	AC	200HZ	DC	800HZ
30mm	AC	150HZ	DC	500HZ

**■ Diagram of connection mode**

## INSTRUCTION MANUAL OF PROXIMITY SWITCH

- About proximity switch
- Honorable customers, thanks for selecting and using our company's sensors. When using our company's products, please consult the instruction first to avoid unnecessary losses caused by mis-operation. Because the product is improved unceasingly, the sensors you got may be different from the drawing in the instruction.
- Uses: it is suitable for controlling the limit machine tool, detecting, counting velocity measurement, liquid level, signal, and automatic line for locating sending signal, etc. It is also widely used in machinery, mine metallurgy, plastics, textile, chemical industry, light industry, tobacco, electric power, railway, war industry and so on.

**Model explanation of proximity switch:**

L M18 - 30 05 N A

Switch category	Form factor	Working voltage	Detecting distance	Output form	Output state	Subsidiary function	Subsidiary function
L Inductance type	M cylinder type	30 6-36 VDC	01 1mm	N Three-wire DC output	A NO	Y With variant Socket	F Long sensing range Non-flush
C capacitance type	M cylinder type	310 5-24 VDC	05 5mm	P Three-wire DC output	B NC	Y Water proof oil proof	M Long sensing range Flush
S Hall type	M cylinder type	320 12-40 VDC	05 5mm	L Two-wire DC output	C NO-NC	Y Special requirement	X Upgrade function
A Safety part type	M cylinder type	210 90-250 VAC	10 10mm	W AC three-wire output	MU Mute voltage	H High temp resistance	SDD Lot Number
X Mute line type	M cylinder type	210 90-250 VAC	10 10mm	J Relay contact output	MU Mute voltage		
H Reed type	M cylinder type	220 380VAC	10 10mm	NP NPN-PNP double output	MU Mute current		
R Ring type	M cylinder type	4 12-30VDC					