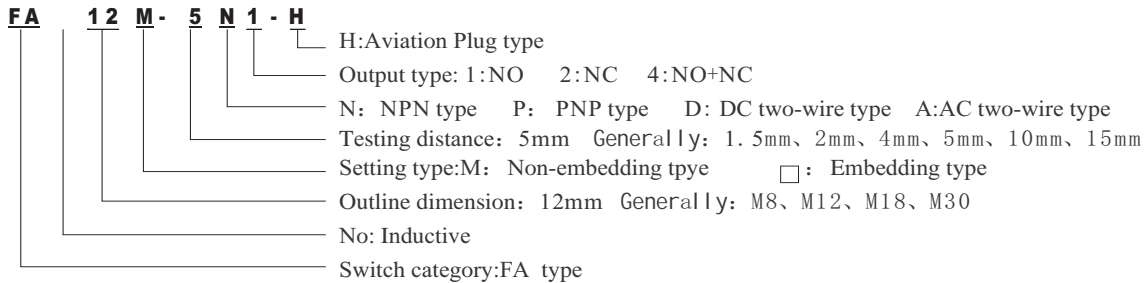# PROXIMITY SWITCH INSTRUCTION MANUAL

■ About proximity switch

● Honorable consumers,thanks for seleting and using the sensor of our company.When using the products of our company,please refer to the instruction first in order to avoid unnecessary losses caused by misoperation.Because the product is improved unceasingly,the sensor of you ger may be different from the drawing in the instruction.

● Uses:It is suirable for conrtolling 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 and war industry and so on departments

Model explanation of proximity swith.

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FA   12 M - 5 N 1 - H
                      └── H:Aviation Plug type
                    └──── Output type: 1:NO    2:NC    4:NO+NC
                  └────── N：NPN type    P：PNP type    D: DC two-wire type   A:AC two-wire type
                └──────── Testing distance：5mm  Generally: 1.5mm、2mm、4mm、5mm、10mm、15mm
              └────────── Setting type:M：Non-embedding tpye      □：Embedding type
         └─────────────── Outline dimension：12mm  Generally：M8、M12、M18、M30
      └────────────────── No: Inductive
   └───────────────────── Switch category:FA type
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Model		FA8		FA12	
Setting type		Embedding	Non-embedding	Embedding	Non-embedding
DC TYPE	NPN NO	FA8-1.5N1-H	FA8M-2N1-H	FA12-2N1-H	FA12M-5N1-H
	NPN NC	FA8-1.5N2-H	FA8M-2N2-H	FA12-2N2-H	FA12M-5N2-H
	NPN NO+NC			FA12-2N4-H	FA12M-5N4-H
	PNP NO	FA8-1.5P1-H	FA8M-2P1-H	FA12-2P1-H	FA12M-5P1-H
	PNP NC	FA8-1.5P2-H	FA8M-2P2-H	FA12-2P2-H	FA12M-5P2-H
	PNP NO+NC			FA12-2P4-H	FA12M-5P4-H
	Two wire NO	FA8-1.5D1-H	FA8M-2D1-H	FA12-2D1-H	FA12M-5D1-H
	Two wire NC	FA8-1.5D2-H	FA8M-2D2-H	FA12-2D2-H	FA12M-5D2-H
AC TYPE	Two wire NO	FA8-1.5A1-H	FA8M-2A1-H	FA12-2A1-H	FA12M-5A1-H
	Two wire NC	FA8-1.5A2-H	FA8M-2A2-H	FA12-2A2-H	FA12M-5A2-H
Testing distance		1.5mm±10%	2mm±10%	2mm±10%	5mm±10%
Frequency	DC	1.5KHz	1KHz	1.5KHz	0.5KHz
	AC	20Hz		20Hz	

Model		FA18		FA30	
Setting type		Embedding	Non-embedding	Embedding	Non-embedding
DC TYPE	NPN NO	FA18-5N1-H	FA18M-10N1-H	FA30-10N1-H	FA30M-15N1-H
	NPN NC	FA18-5N2-H	FA18M-10N2-H	FA30-10N2-H	FA30M-15N2-H
	NPN NO+NC	FA18-5N4-H	FA18M-10N4-H	FA30-10N4-H	FA30M-15N4-H
	PNP NO	FA18-5P1-H	FA18M-10P1-H	FA30-10P1-H	FA30M-15P1-H
	PNP NC	FA18-5P2-H	FA18M-10P2-H	FA30-10P2-H	FA30M-15P2-H
	PNP NO+NC	FA18-5P4-H	FA18M-10P4-H	FA30-10P4-H	FA30M-15P4-H
	Two wire NO	FA18-5D1-H	FA18M-10D1-H	FA30-10D1-H	FA30M-15D1-H
	Two wire NC	FA18-5D2-H	FA18M-10D2-H	FA30-10D2-H	FA30M-15D2-H
AC TYPE	Two wire NO	FA18-5A1-H	FA18M-10A1-H	FA30-10A1-H	FA30M-15A1-H
	Two wire NC	FA18-5A2-H	FA18M-10A2-H	FA30-10A2-H	FA30M-15A2-H
Testing distance		5mm±10%	10mm±10%	10mm±10%	15mm±10%
Frequency	DC	0.5KHz	0.35KHz	0.4KHz	0.2KHz
	AC	20Hz		20Hz	

For example:FA12M-5N1-H

The above indicates FA type inductive switch,M12 indicates the diameter is 12mm.The detecting distance is 5mm and N indicates NPN type,H indicates that's aviation plug type.

■ Setting operating distance(sn)

Please set the operating distance of the switch with in 70% of standard operating distance to protect the switch from being affected by temperature and voltage.

When detecting other metals,the switch has different operating distances(Diagram1).

When the switch is used for measuring operating frequency or used in oter high-speed places,please set the operating distance of the switch within 1/2of standard operating distance.At this position,the switch can reach max operating frequency.

Setting operating distance(Sa):Sa=(Sn)*70%

For example:FA18M-10N1-H   Sa=10mm*0.7=7mm.

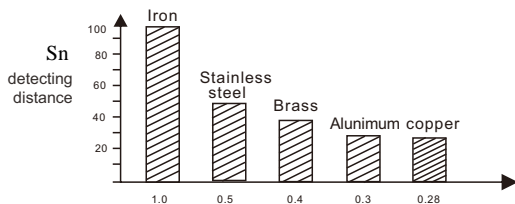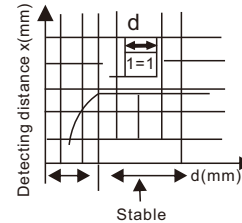Ratio of inducing different materials

Diagram1

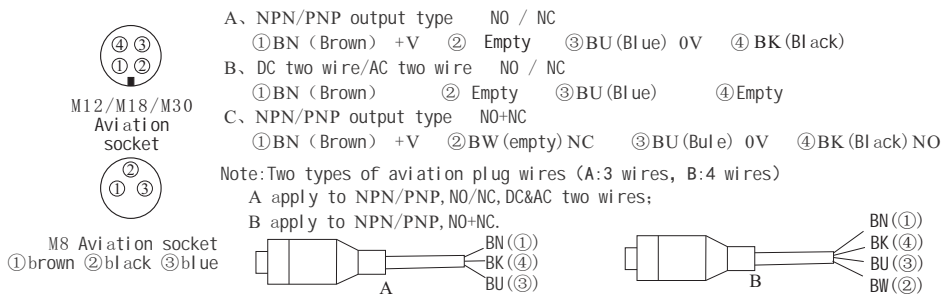Effect that the size of the detecting object to the detecting distance

Standarddetectingobjeci Diagram2

■ Points for attention when using the switch

● The product cannot be used when the power is turned on (within 100ms);

● Surge protection: When the proximity switch is used near a place with severe surge interference (such as welding by an electric welder), please add a surge absorption device;

● When the load current is greater than 200mA, please use a small relay to switch, that is, the proximity switch controls the coil of the small relay, and the small relay controls the load;

● AC power supply must use insulated transformer,Please do not use auto transformer.

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

■ Aviation plug pin description

M12/M18/M30 Aviation socket

M8 Aviation socket
①brown ②black ③blue

A、NPN/PNP output type   NO / NC
  ①BN（Brown）+V ② Empty ③BU（Blue）0V ④ BK（Black）

B、DC two wire/AC two wire   NO / NC
  ①BN（Brown）   ② Empty   ③BU（Blue）   ④Empty

C、NPN/PNP output type   NO+NC
  ①BN（Brown）+V ②BW（empty）NC ③BU（Bule）0V ④BK（Black）NO

Note:Two types of aviation plug wires (A:3 wires, B:4 wires)
  A apply to NPN/PNP, NO/NC, DC&AC two wires;
  B apply to NPN/PNP, NO+NC.

A BN（①）
   BK（④）
   BU（③）

B BN（①）
   BK（④）
   BU（③）
   BW（②）

■ Digram of connection mode

1 PNP NO type
1 Brown
4 Black Max 200mA +V
Load DC 10-30V
3 Blue 0V

5 NPN NC type
1 Brown +V
2 Black Load DC 10-30V
3 Blue Max 200mA 0V

9 AC two-wire NO type
1 Brown Load L1
3 Blue Max 200mA ~ AC 100-240V
N

2 PNP NC type
1 Brown +V
2 Black Max 200mA DC 10-30V
Load
3 Blue 0V

6 NPN NO+NC type
1 Brown
4 Black Load +V
2 White Load
3 Blue 0V
Max 200mA DC 10-30V

10 AC two-wire NC type
1 Brown Load L1
3 Blue Max 200mA ~ AC 100-240V
N

3 PNP NO+NC type
1 Brown +V
4 Black Load
2 White Load
3 Blue 0V
Max 200mA DC 10-30V

7 DC two-wrie NO type
1 Brown Load +V
Max 200mA DC 10-30V
3 Blue 0V

4 NPN NO type
1 Brown +V
4 Black Load DC 10-30V
3 Blue Max 200mA 0V

8 DC two-wrie NC type
1 Brown Load +V
Max 200mA DC 10-30V
3 Blue 0V