

Inductive proximity switches manual



Application

Inductive proximity switch is only allowed to sense metallic objects or other substance with conductivity such as mild steel, stainless steel, aluminum, copper and etc.

Influence between sensing object and sensing range. (fig. 1)

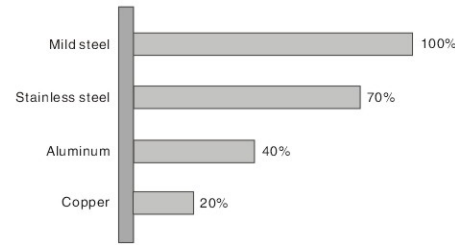


图 1. 1

Mounting

The mounting of the Inductive proximity switch divides into two ways, even and non-flash mounting, according to different mounting places and different demands. The mounting way is determined by the surrounding while mounting.

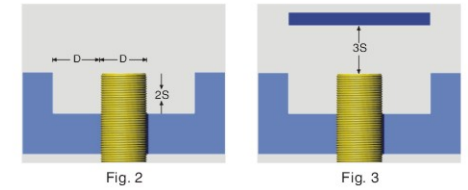
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Order number & Dimension

Part number	Mounting type	Dimension
IA $\phi 8$	Standard mounting With nut	1、Nut: M8 2、Vent: $8.2 < D < 10$ (mm) 3、Even mounting
IB $\phi 12$	Standard mounting With nut	1、Nut: M12 2、Vent: $12.2 < D < 14$ (mm) 3、Uneven mounting
IC $\phi 18$	Standard mounting With nut	1、Nut: M18 2、Vent: $18.2 < D < 22$ (mm) 3、Even mounting
ID $\phi 30$	Standard mounting With nut	1、Nut: M30 2、Vent: $30.2 < D < 34$ (mm) 3、Uneven mounting

Mounting requirement

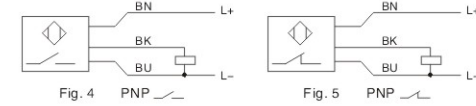
- There should be a non-metallic area around the sensing interface, The range of this area is D and 2S. (fig. 2) Notice: S- Sensing range, D- Diameter of switch
- Any metallic object should be away from the sensing interface by 3S. (fig. 3) Notice: S- Sensing range.



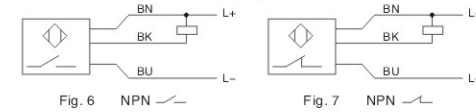
Connection

Three-wire: PNP & NPN mode of connection

PNP mode of connection (fig. 4, fig. 5)



NPN mode of connection (fig. 6, fig. 7)



Two-wire (fig. 8, fig. 9)

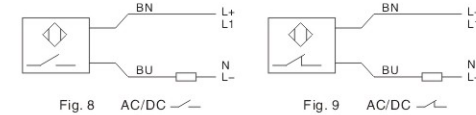


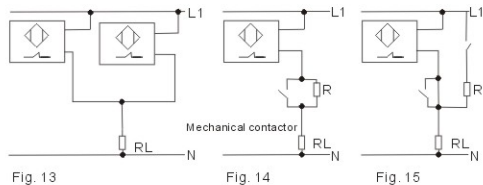
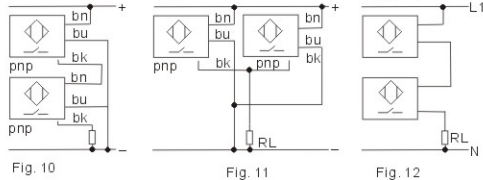
Fig. 8

Fig. 9

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Series connection and parallel connection

- Series connection of three-wire DC and three-wire DC sensor. (fig. 10)
- Parallel connection of three-wire DC and three-wire DC sensor. (fig. 11)
- Series connection of two-wire AC sensor. (fig. 12)
- Parallel connection of two-wire AC sensor. (fig. 13)
- Series connection of mechanical switch and AC sensor. (fig. 14)
- Parallel connection of mechanical switch and AC sensor. (fig. 15)



Notice

Installation

- Mounting screw switch:
Do not tighten with over-torque when mounting the switch. (fig. 16)
- Mounting non screw type pillar switch:
When adopt adjusting screw, the tightening torque should be within. (fig. 17) Notice: T-torque ($2\text{kgf}\cdot\text{cm} \leq T \leq 4\text{kgf}\cdot\text{cm}$).
- Guard of switch lead-wire:
When mount switch, fix the lead-wire at a distance about 10cm from the switch with wire clip so as to prevent the switch lead-wire from damage of outer force. (fig. 18)
- In order to avoid of the error resulted from mutual interference: please keep a certain space (5S and 3D) between the switches while make a facing or parallel mounting. (fig. 19)

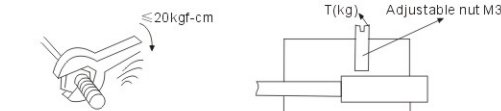


Fig. 16

Fig. 17

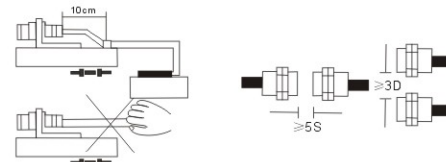


Fig. 18

Fig. 19

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- DC switch should adopt insulation transformer and ensure stable voltage mains corrugation.
- If any electric power line or dynamic line passes through the surrounding of switch lead-wire, in order to prevent the switch from damage or error action, cover the metal bushing on the switch lead-wire and ground it to the earth.
- Set the switch use distance within the rated distance to avoid the effects from temperature and voltage.
- Wiring while power-on is strictly prohibited. Connecting the wires strictly according to the wiring diagram and output return elementary diagram.
- In order to maintain reliable action and long service life, please avoid the (outdoor) occasion beyond the stipulated ambient temperature. Do not drench it with water or water-soluble cutting lubricant when it is used with cover, although the capacity sensor is waterproof. Can not be used in the occasions with chemical agents, especially strong base acid, nitric acid, hot strong sulfuric acid and so on. If there are any special requirements to the switch like water proof, oil proof, acid proof, base proof, high temperature proof or with any other specifications, the users are required to give clear indication when placing an order. We can produce according to the requirements of the use.

Maintenance and overhaul

In order to keep the proximity sensor to work stably for a long time, the following regular examinations should be performed just like general control.

- Check the installation position of detected object and proximity sensor if any deviation, loosening or deformation exists.
- Check the attached wires and connecting parts if any loosening bad contact or wire breaking off exists.
- Check if there is any metallic powder accumulation or not.
- Check if the temperature condition and surrounding environment condition are normal or not.
- Check if the detection distance is normal or not.

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Sensing range setting

Sensitivity

For the safety of operating, the operating range is not allowed to be over the sensing range of inductive proximity switch.
The size of the sensing range of inductive proximity switch depends on the material of the sensing object.

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