

INSTRUCTION MANUAL PHOTOELECTRIC SWITCH

The infrared photoelectric switch made by our factory is an upgrade and generation product is manufactured on the basis of absorbing foreign advanced technology, following the practices and demands of numerous users. The photoelectric switch checks whether there is an object or not by using the shading and reflection of modulating infrared beam from the being checked object and strobe by clocking loop, and then produces the purpose of switch. Besides metal, the photoelectric switch can detect other objects. It can directly replace the same product at home and abroad, and widely be used in automatic fields, such as tobacco, machine, textile, mine, paper making, steel and safety insurance and so on.

Major four types of photoelectric switch: Indicated by A for diffuse reflection form (scattered reflection); B for feedback reflection form (mirror surface reflection form); C for correlation form (penetration type), E for slot form (ditch form);

1. Diffuse reflection form indicated by A: When the reflection photoelectric transducer launching beam, the object produces diffuse reflection. The sender and receiver will form individual standardized component. When the sufficient assembled light return to receiver, the transducer state will change. The typical value of operating distance comes to 2m. For example: G18-3A10NA type, Fig. I. The precision potentiometer can be used to adjust the operating distance. The operating distance will be enlarged if adjusts potentiometer at clockwise; and it will be diminished if adjusts potentiometer at anti-clockwise. But it can be in the critical state for fear producing mis-operation.
2. Feedback reflection form indicated by B: Feedback photoelectric transducer is standard positioning consists of sender and receiver. The beam from sender is reflected at the opposite reflecting mirror i.e. return to receiver. The throughput time of light is twice over the retention time of signal. The typical effective action distance is 0.1m-0.5m away from person. When the beam is broken, a switch change will be produced. For example: G50-3/4BJC, Fig.II.

3. Correlation form indicated by C: The correlation form photoelectric transmitter consists of sender and receiver that is separated each other on structure. The typical form is that the transmitter located on the same shaft line can disconnect each other to 50m. When the beam is broken, a switch change will be produced, It is uneasy to be interfered if the effective distance is far. For example: G76-2C101JC, Fig. III

4. Slot form indicated by E: It is used in detection of aberration, dark and light, girde list and knor list, setting sensitivity adjusting, adjusting multium potentiometer at clockwise. It is also suitable for detecting the thicker object: adjuster distance driving, and for detecting transparent, litness and aberration objects. For example: G63-3E03NA.

Model composition and definition of infrared ray photoelectric switch.

G 18 - 3 A 10 N A □
1 2 - 3 4 5 6 7 8

NO.	Composition	Code and definition
1	Basic form	G: infrared ray photoelectric switch
2	Outward appearance code	18, 30, 76,.....
3	Working voltage	2.9V-230VAC 3:10-30VDC 4:12-24VDC/24-240VAC 5: Special voltage
4	Detection way	A: diffused reflection type (beamed reflection type) B: feedback reflection type mirror (illumination type) C: penetration type (correlation type) D: marking detection type E: optical fiber type
5	Detection distance	05:5cm 10:10cm 3:3cm 10:1:10m
6	Output form	N: NPN transistor output P: PNP transistor output K: SCR controllable silicon output J: Relay contact output L: AC two-wire output S: AC three-wire output Switch two outputs: NPN and PNP Q: optical coupling output
7	Output state	A: Normally open (light entering ON) B: Normally close (light shattering ON) C: Normally open+normally close
8	Subsidiary	T1: front delay T2: rear delay T: switch variation connector I: special requirement

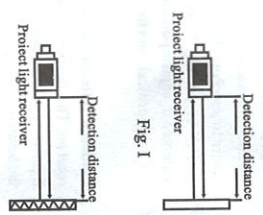


Fig. I

For example: G18-3A 10NA

G18 indicates M18 cylindrical form, working voltage is DC10-30V, diffuse reflection form, detection distance is 10cm, NPN (negative logic) photoelectric switch of NO output.

Important attention:

Upon AC two-wire system correlation form, it is necessary to make a clear distinction between sender and receiver firstly, and then connect. Check again to make sure that there is no mistake between receiver and load in series before starting up machine to protect the receiver from burning.

Upon AC two-wire system diffuse reflection form, it must be firstly connected with load, then power supply when connection. Check again to make sure there is no mistake before starting up machine for fear bringing unnecessary problem to you.

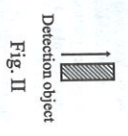


Fig. II

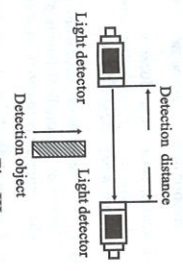


Fig. III

Function, working ambient light illumination and correct directions of photoelectric switch.

1. The surface color (reflectivity) and size of detection object affect the reflection distance and working area of transducer. When using detection photoelectric transducer, the surface color and size of action area.
2. Size of detection object and detection distance:
Detect brightness object according to Fig. IV. The detection distance should be poorer a little than the bigger one.
3. Surface color and reflectivity of detection object is much bigger, the detection distance can be much longer according to Fig. V.
4. Setting mode of transducer when detecting sagging and grading:
The slot form photoelectric switch is most suitable for detecting sagging and grading. (Fig. VI)
5. The relation between the smallest detection and lens diameter
The size of the smallest detection object is decided by lens diameter when using the permeating photoelectric transducer. (Fig. VII)
6. Working ambient light illumination: The influencing degree of light receiver will be changed, and the basic reference will be ambiguous at illuminating value of (B) and (D) in accordance with the setting distance D and white paper reflectivity.

Diagram of connection mode

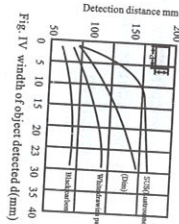
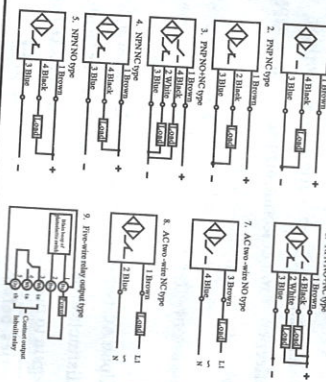


Fig. IV Width of object detected (mm)

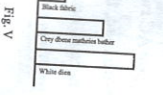


Fig. V

7. Correct usage of the switch. (Fig. IX)

Method of preventing mutual interference and points for attention:

When the photoelectric transducer is close to device, if there is an unstable action caused when the light of another one incidence, that is called mutual interference. The following methods can get rid of it:

1. Projector and light receiver is mutually mounted at crosswise.
2. When the reflect form being used in parallel, the mutual interval should keep the setting distance being above 1.4 times of detection distance.
3. When the correlation form being used in parallel, the mutual interval should keep the setting distance being above 0.4 times of detection distance.

If wiring the high-voltage wire, power line and wiring of photoelectric transducer at the same pipe arrangement or wire chase, it will cause mis-operation or damage when induction exists. It should be separately wired or should use individual wiring chase in the principle.

The DC type should use DC power supply, and use insulated transformer. Please do not use autotransformer. And the lead wire length of the switch should be in 100M for fear voltage drop being too large.

The using supply voltage should be in the range of supply voltage.

The following installation occasions will result in error action, take note of:

1. Dusty occasion.
2. The occasion directly sparred with water, oil and agent, etc.
3. The occasion directly sparred with hard light like, sunlight

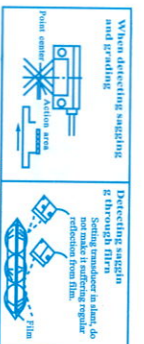


Fig. VI

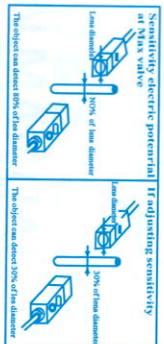


Fig. VII



Fig. VIII

Fig. IX