

GDJ-211 612
311

Photoelectric detecting sensor – user manual

- l Before cleaning the controller, please ensure that the power is switch off.
- l Please remove stains on the display panel by using a soft cloth only.
- l No scrubbing or touching the display panel with any hard object, the display panel can be easily scratched.
- l Do not press any button on the display panel using pointy objects such as ballpoint pen or screw driver, it can easily scratch the panel or damage buttons on the panel.

1. Introduction

GDJ series photoelectric detecting sensor (Its popular name is photoelectric head photoelectric eye) adopts the principle of photoemission and photo receiving. It shots out modulated ray to the measured object and receives the ray reflected from the measured object, then according to the intensity of the received ray to determine the color of the object or to distinguish whether or not is the object existed. As a sensor it is used in the control systems of the soft packaging machine, the printing machine, foodstuff machine, textile and papermaking machine together with other circuits and devices. It can also detect the color-mark printed on the color-background or other pattern color block as its mark and can check whether or not are the lines and objects existed. It have the functions of automatic orientation, deciding constant length, distinguishing color, correcting error, checking edition, counting number, etc.

2. Technical data

MODLE	GDJ-211G	GDJ-211B	GDJ-211BJ	GDJ-311□-V	GDJ-311□-I ₁ (I ₂)
LIGHTING SOURCE	Green	Blue	Blue green	Green, blue, blue green,white	Same as the left
RESPONSE TIME	100μS	50μS		100μS/50μS	
MEASURING RANGE	8mm			9mm	
Type Output	Bright Open adding dark open dual output (NPN model)			Bright/dark open based on option of the user(NPN model)	
Switch Output	Switch Output			Switch Output	
Continuous Signal Output	————			0.5-5V,内阻为10K 0~10mA (4~20mA)	
Switch Output current	<200mA				
Switch Output Voltage	Low electric Level(open):-<1.5V;high electric level(close):pove supply voltage-0.7V				
Power Supply	10-30VDC、<80mA				
Protected Function	Protection on the phase reverse of the power supply, protection on the short circuit of the load				
Operating Circumstance	Temperature: 0-50℃、Sunlight: <10000Lux				
Weight	450g			500g	
Outline Size	28(W)*69(H)*105(L)mm, Length of the lead line 2m			38(W)*62(H)*100(L)mm,Length of the lead line 2m	

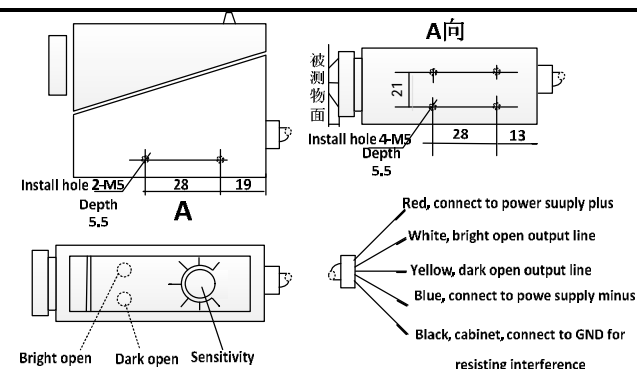
GDJ-612 Parameter

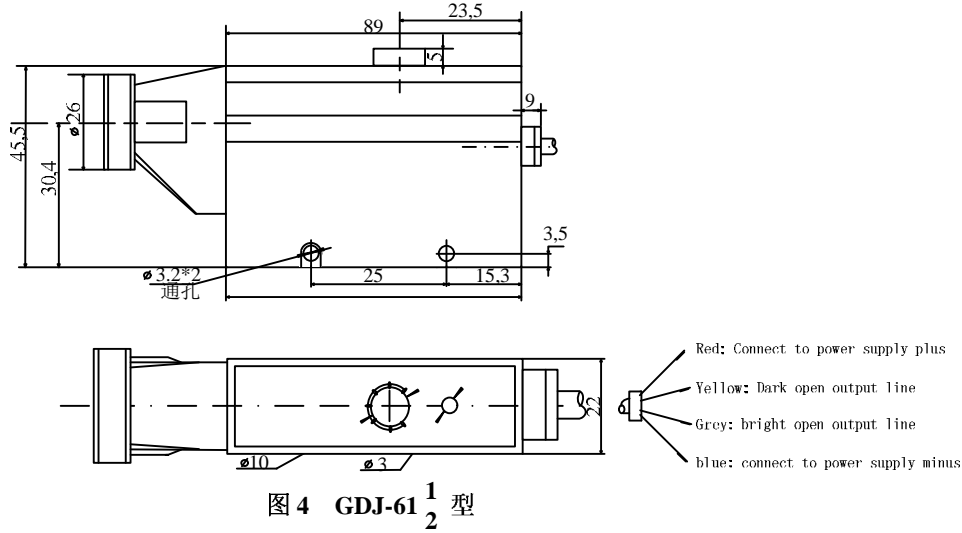
Measuring Distance	10mm±2mm
Power Supply	12~30 VDC
Consuming Current	<45mA
Light Point	Φ 0.5~Φ1.5
Angle	Light perpendicular to the measured surface; allowed deviation ±15°
Respond Time	<1ms
Output	Bright open adding Dark open; Dual Output; Short-circuit Protection
Output Instruction	Red LED Bright open instruction
Protected Function	IP67 (Dustproof and dampproof)
Environment Temperature	-15℃~65℃
Case Material	Engineering Plastics
Light Source	White/Red Blue reen
Lead	Four Core Shielded Cable, Standard Length:2m

3. Principles

The objects having different colors are provided with different reflectivity for the same incident light. Hence, when we emit the light with constant color and constant intensity, we can distinguish different color or determine whether or not the object is existed according to the intensity of reflected light that was received by the sensor.

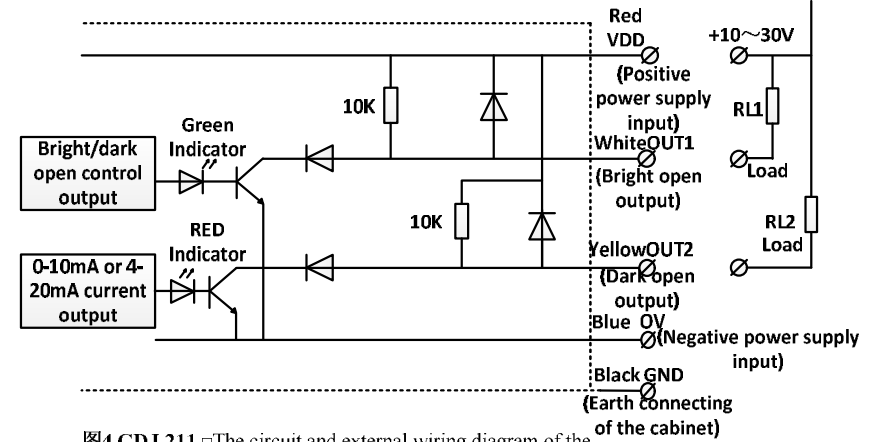
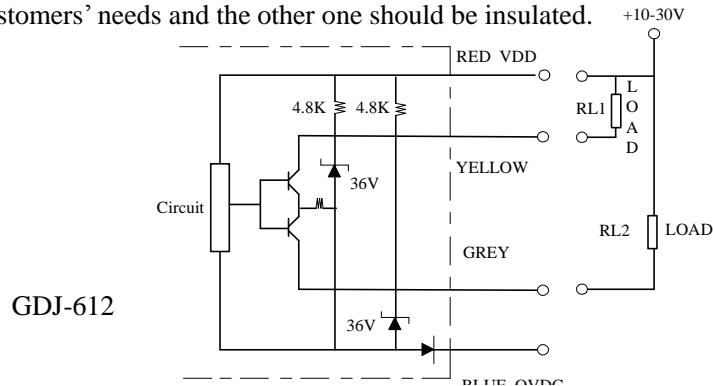
4. Appearance, Installation Size





5. Installation and Wiring

1. The sensor should be set up vertically on the top of the measured object. The distance between the surface of measured object should be approximately 10mm to the sensor lens according to the different model. The vertical adjustment distance of mounting base plate should be 10mm.
2. The sensor has four wires which differentiated by its color. Wiring shown in the diagram below. Red and blue wires respectively are positive and negative power wire; connect with DC power supply. Yellow wire is the bright open output wire and grey one is the dark open output wire; these two wires regard as the NPN type switch control output. One of these two wires should be chosen depends on customers' needs and the other one should be insulated.



6. Sensitivity adjustment

In general, (No matter the light aims to the deep color or light color object) Rotating the knob of sensitivity by clockwise, then the green light (OUT 1) turns on.

Firstly: Make the light-spot aims to the dark color side of object (Generally as color patch), adjust the Sensitivity knob, and make the green light-spot just be in the status of disappeared, remember the position of the knob (Notes A).

Secondly: Make the light-spot aims to the light color side of object (Generally as background color), adjust the Sensitivity knob by anticlockwise, and make the green light-spot just be in the status of disappeared, remember the position of the knob (Notes B).

Thirdly: Turns knob to the middle of A and B.

Notes: Because the Sensitivity knob is multiturn potentiometer. Not only remember the position of A and B, but also remember the number of knob turns. Then, turn back the knob to the middle of number of knob turns.

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