

# Intelligent infrared reflective obstacle detection sensor

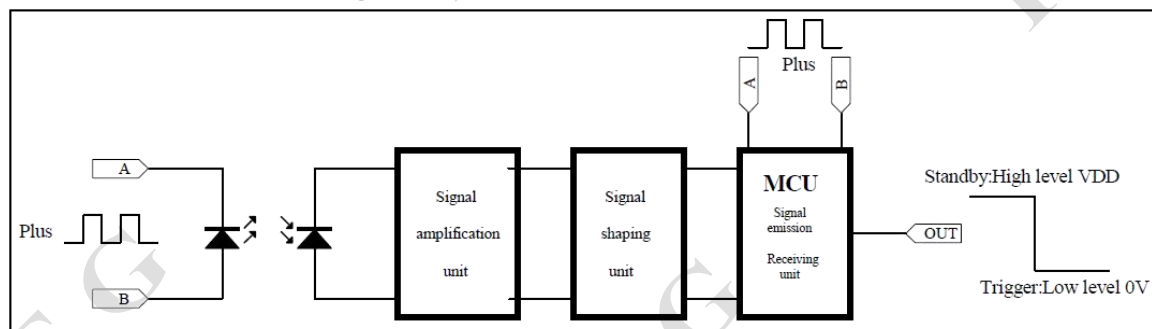
## Introduction

Intelligent infrared reflective obstacle detection sensor is controlled by microprocessor (MCU). It can be programmed online to meet the application requirements and use scenarios of different customers. This product integrates infrared receiver, transmitter, MCU, signal processing unit and output control unit. It has strong anti-photoelectric interference ability, stable and reliable performance, low power consumption and small size.

It is suitable for static obstacles (or moving obstacles) detection, household appliance switch control, display backlight control, intelligent lock, intelligent bathroom, toys, robot obstacle avoidance, human/vehicle flow counting, assembly line product counting, object proximity monitoring and other consumer products and other induction control scenarios. Long detection distance, high sensitivity and large angle can be customized according to customer requirements.

The overall dimensions, sensing distance detection period and output signal mode of the product can be customized according to customer requirements.

## Functional Block Diagram



## Model Naming Rules

HEG-IROS-XX-X-XX

- Product serial number
- M: Use adjustable resistance to adjust the distance;  
A: Use remote control to adjust the distance
- Sensing distance: e.g. "10" stands for 10cm
- Intelligent infrared reflective obstacle detection sensor
- Company name: Harbin HEG Technology Development Co., Ltd

## Product Features

- 1、Volume: 40mm×11mm×9.8mm;
- 2、Low power consumption: Average standby current is less than 8  $\mu$  A (Test condition: the detection period is 500ms);
- 3、Sensing distance (hand):10-100cm (Customizable) ;
- 4、Light immunity: Strong immunity to ambient light;
- 5、Detection period: 125ms 250ms 500ms 1000ms, can be set by remote control, see the product instructions for details.

## Product Appearance Picture



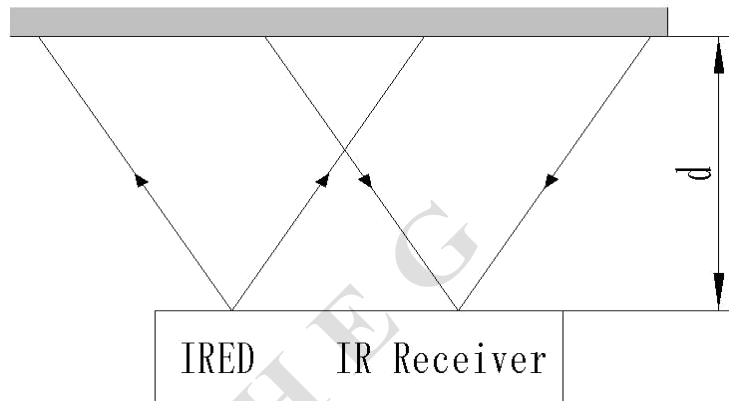
HEG-IROS-XX-A-03

## Main Technical Parameters of Products

Main Parameter	Numerical Value	Unit	Remarks
Operating Voltage (DC)	3.0-5.5	V	Recommend:VDD=3.3V-5.0V
Standby current	$\leq 8$	$\mu$ A	Test condition:VDD=3.3V
Infrared Wavelength	940	nm	IF=20mA
Signal Output Mode	GPIO	/	Standby: The pin signal is high level VDD; Triggered: The pin signal changes from high level VDD to low level 0V;
Output Drive Current	$\leq 10.0$	mA	Test condition:VDD=3.3V
Outline Dimension	L*W*H 40*11*9.8	mm	/
Port	3P*1.0	mm	3P Horizontal SMT socket

Inductive Distance	$d=10-100\pm 5$	cm	Test condition:VDD=3.3V; Panel light transmittance 80; See below for test methods: When transparent glass or infrared transparent panel is set in front of the sensor, the distance between the sample and the panel $\leq 1\text{mm}$ ;
Sensing Angle	$15\pm 5^\circ$	degree	/

**Test Method**



HEG-IROS-XX-A-03

**Instructions for Product Use**

The interface socket of this module contains three pins: G O V.

**G:**GND,negative of DC power supply;

**O:**OUT,trigger signal output end, when the product detects the occlusion, the pin signal changes from high level to low level signal, and determine whether the occlusion exists by detecting the level signal transformation;

**V:**VCC, positive of DC power supply,3.3-5.5V.

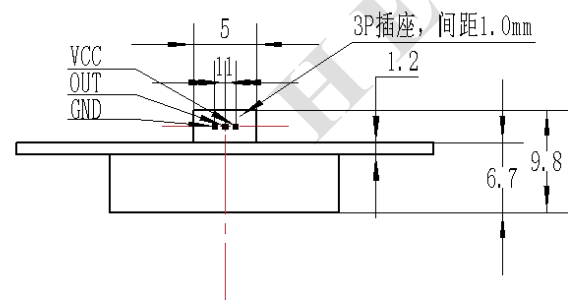
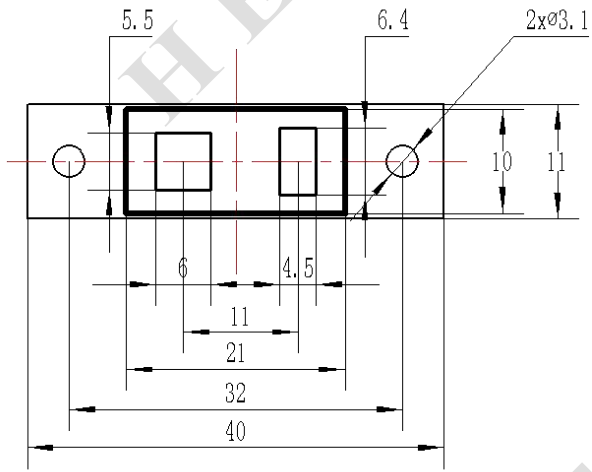
**Note:** The positive and negative poles should not be connected in reverse order to avoid burning the module.

**Sensing distance:** 10-100cm adjustable, infrared remote control automatic distance button, trigger the sensor into automatic learning mode, real-time adjustment of the sensor detection distance, the method is shown below:

- 1.The obstacle is set at the farthest distance that the customer needs to detect;
- 2.Align the remote control with the sensor and press the automatic distance button;
- 3.When the indicator of the sensor flashes quickly, the sensor enters the automatic distance sensing learning state;
- 4.When the indicator is steady on, the sensing distance parameter is stored by the sensor, and the automatic distance detection learning of the sensor succeeds.

**Detection period:**125ms, 250ms, 500ms, 1000ms. It can be set by pressing the remote control button.

## Overall Dimension Drawing (unit: mm)



Unit:mm

HEG-IROS-XX-A-03