

HW1004 PIR Sensor Module

Specification



Introduction

HW1004 automatic control products based on digital infrared technology, high sensitivity, high anti-interference, strong stability, widely used in various types of automatic sensing circuit systems (such as: toys; digital photo frame; security intrusion detection; occupancy detection; network camera Private alarms; car burglar alarms; TV refrigerator air conditioners; sensor lights; smart home control systems, etc.)

Features:

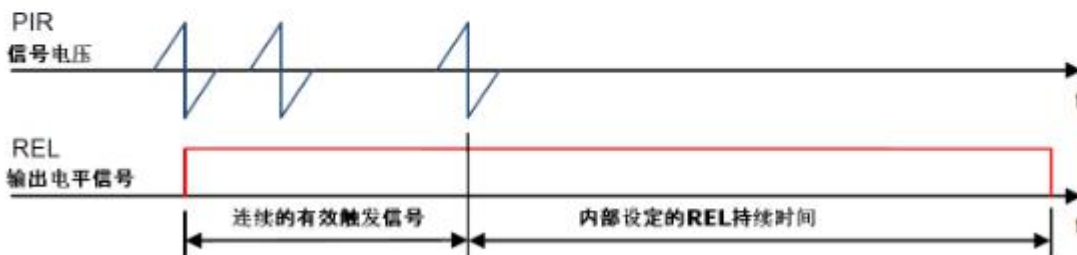
1. Digital signal circuit processing.
2. Two-way differential very high impedance sensor input.
3. Second-order Butterworth band-pass filters with built-in infrared sensors to shield input interference from other frequencies.
4. High power supply rejection ratio, anti-radio frequency interference.
5. Sensitivity, timing, light sensor Schmitt REL output.
6. Low voltage, low power consumption, start working immediately after startup.
7. Fully automatic sensing: When the person enters the sensing range, it outputs a high level. When the person leaves the sensing range, it automatically delays and turns off the high level and outputs a low level.

Trigger mode:

When the pyroelectric infrared signal received by the probe exceeds the trigger threshold inside the probe, a count pulse will be generated internally. When the probe receives this signal again, it will think that it has received the second pulse. Once the 2 pulses are received within 4 seconds, the probe will generate an alarm signal and the REL pin will trigger high level. . In addition, as long as the amplitude of the received signal exceeds more than 5 times the trigger threshold, only one pulse is needed to send the REL output. The following figure shows an example of a trigger logic diagram. For multiple trigger conditions, the output REL's hold time starts from the last valid pulse.



单次触发条件下REL输出的持续时间



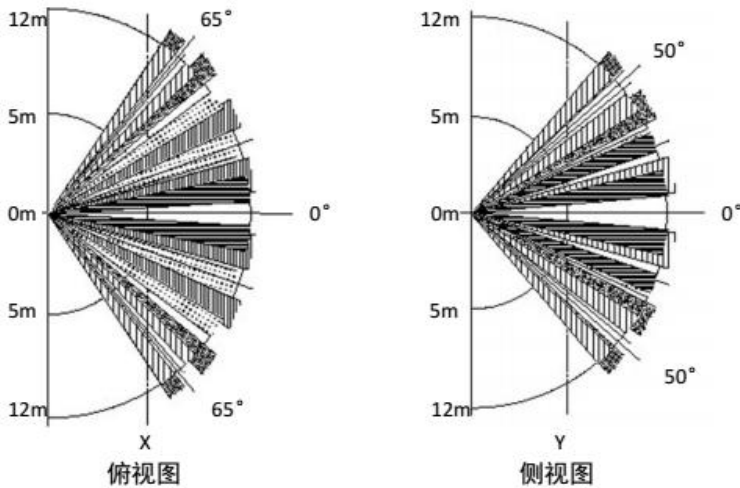
智能探头报警触发时序图

Technical Parameters:

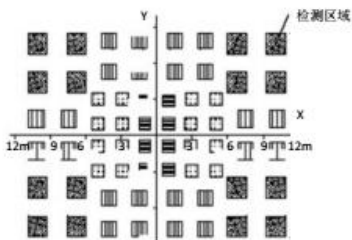
Product	HW1004	
Operating Voltage	3.3-20V	
Static power consumption	<0.1mA	
output method	Induction3V No induction0V	
Sensing mode	passive	
Delay time	2S	Unchangeable
Block time	2S	Unchangeable
Trigger mode	Cannot be triggered repeatedly	
Sensing distance	5m	8m and 10m Change lens
Sensing range	120°	
Operating temperature	-20—75℃	
Dimensions	10X8X7mm	



Window sensing angle and the transmission spectrum of the material

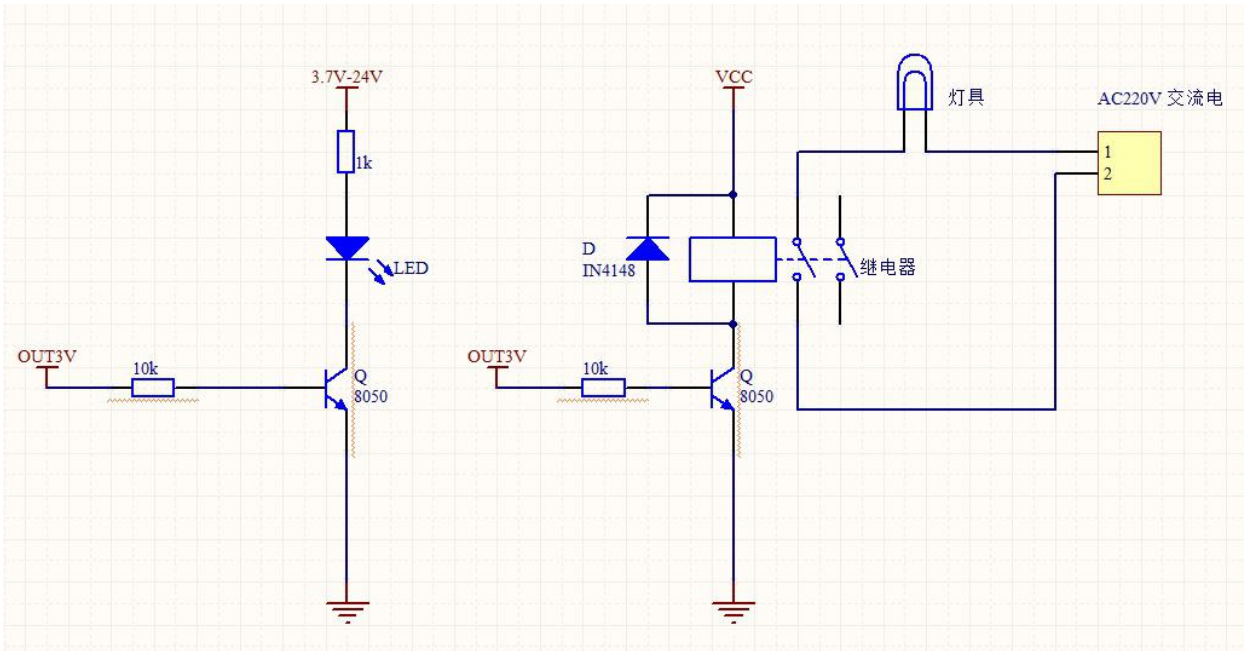


X-Y 截面图



- 注：1. X-Y 截面图表示检测区域。
 2. 检测区域内有温度差的检测对象横切后可进行检测。

Application detection circuit schematic



Precautions

The HW1004 is a pyroelectric infrared sensor module that detects infrared changes. Detect heat sources outside the human body, or no heat source temperature changes

In the case of moving and moving, the detection may not be possible. Need to pay attention to the following general matters. Please be sure to check the performance and reliability with the actual usage status.

1. When detecting heat sources other than the human body

(1) When a small animal enters the detection range

(2) Far-infrared direct-irradiation sensors such as sunlight, car headlights, and incandescent lamps

(3) When the temperature in the detection range changes drastically due to the warm air of a cold greenhouse equipment, cold air, and water vapor of a humidifier, etc.

2. When it is difficult to detect the heat source

(1) When there is a material such as glass or acrylic that is difficult to transmit far-infrared rays between the sensor and the object to be detected

(2) The heat source in the detection range hardly moves or moves at high speed

3. When the detection area is enlarged

When the temperature difference between the ambient temperature and the human body is large (approximately 20°C or higher), even if the specified detection range is

In addition, there are sometimes broad detection areas.

4. About other uses

(1) If there is a stain on the window, it will affect the detection performance, so please pay attention.

(2) The lens is made of soft material (polyethylene). After applying load or impact on the lens, it will be deformed and

Damage caused by malfunction and performance deterioration, so please avoid the above situation.

(3) Electrostatic discharge of ±200V or more may cause damage. Therefore, be very careful when handling

and avoid direct use

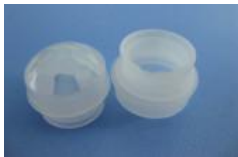
Touch the terminals etc.

(4) When soldering the wire, perform soldering within 3 seconds when the soldering iron temperature is 350°C or lower.

Soldering through the solder bath may cause deterioration of performance, so please avoid it.

(5) Please avoid cleaning the sensor. Otherwise, the cleaning solution intrudes into the lens, which may cause deterioration of performance.

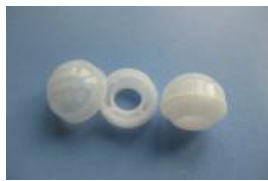
Commonly used lens selection table:



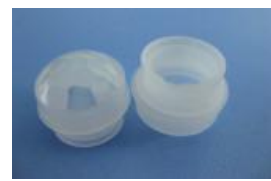
Model: 8120-5
Angle: 120°
Distance: 6m
Size: φ12.7mm



Model: 8003-3
Angle: 120°
Distance: 10m
Size: φ25mm



Model: 8090
Angle: 120°
Distance: 8m
Size: φ17.8mm



型号: 8120-5
角度: 120°
距离: 6m
尺寸: φ12.7mm



Model: 8308-3
Angle: 120°
Distance: 5m
Size: φ11.8mm



Model: 8308-5
Angle: 90°
Distance: 5m
Size: φ10.27mm