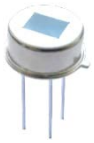
1、 Product Overview

The GH718 series is a series of human body pyroelectric infrared (PIR) sensing modules designed specifically for low-power IoT devices. By using a high-sensitivity infrared sensor paired with a Fresnel lens, it can operate stably within a wide voltage range of 3V-20V, with static power consumption as low as 30 μ A (10 μ A). It supports 3-7 meter distance switching and trigger mode configuration, making it an ideal choice for battery powered smart home products.

GH718A	GH718C	GH7183	GH7184	GH-7186
				

2、 Core Features

parameter item	specification value	Instructions
working Voltage	DC 3.7V - 20V	Compatible with lithium battery, USB 5V, 12V power supply
quiescent current	≤30μA	1000mAh battery can last up to 3 years
sensing distance	7m-3m （adjustable）	switch via jumper/pad
induction angle	110 ° conical shape	When installed at a height of 2.4m, it covers a radius of approximately 5m
output signal	3V TTL level	High level 3V/low level 0V, can directly drive MCU

3、 Interface definition

Red line, yellow line, black line

pin	name	Functional Description
VCC	power +	DC 3.3V -20V input
OUT	OUT signal output	Output 3V
GND	power -	grounding

4、 Working mode configuration

●Mode 1: Cannot be triggered repeatedly (default mode)

● Behavior: After sensing the human body, output a high level, and automatically turn off after the delay ends. Sensing again during the delay period will not reset the timer.

● Applicable scenarios: security alarm, access control system, anti shake trigger

Mode 2: Repeatable Trigger

● **Behavior:** After sensing the human body, output a high level. If activity is continuously detected, maintain the high level until the person leaves before delaying the shutdown.

● **Applicable scenarios:** intelligent lighting (lights on when people come, lights off when people leave), fan control

Configuration method: Switch by short circuiting the jumper or solder pad on the back of the module (see silk screen label for details).

5、 IoT Device Integration Guide

5.1 Hardware interface:

●GH718 module → IoT controller (such as ESP32/8266):

●VCC → 3.3V/5V/12V power supply

●GND → System Ground

●OUT → GPIO input (internal pull-down recommended)

5.2 Software Logic Example (Arduino):

GH-718_1.0

```
#define GH718_PIN 5 //定义GH718数字引脚

#define LED1 15 //定义LED1数字引脚

void setup() {
  Serial.begin(9600); //初始化串口通讯
  pinMode(GH718_PIN, INPUT); //设置GH718为输入模式

  pinMode(LED1, OUTPUT); //设置LED1为输出模式

  digitalWrite(LED1, LOW); //控制LED1输出低电平 0
}
void loop() {
  if (digitalRead(GH718_PIN) == HIGH) {
    Serial.println("GH718 Sensor OUTPUT: ON"); //检测到人体，输出提示信息

     digitalWrite(LED1, HIGH);//控制LED1输出高电平 1
  }
  else {
    Serial.println("GH718 Sensor OUTPUT: OFF");//未检测到人体，输出提示信息

     digitalWrite(LED1, LOW);//控制LED1输出低电平 0

     // 夜间触发
    // 执行联动：开灯/上报云端/录像
   // 执行联动：上报MQTT、开灯、推通知等

  }
  delay(1000);//延时1000ms，循环检测
}
```

5.3 Power consumption optimization suggestions:

- Power supply: Prioritize the use of 3.7V lithium batteries for the highest efficiency
- Sleep: MCU can deeply sleep and wake up through changes in OUT pin level
- Duty cycle: No need for continuous scanning, interrupt triggering is sufficient

5.4 Distance switching method

- 7m mode: used for large spaces such as corridors and living rooms (default)
- 3m mode: used for small spaces such as bedside tables, wardrobes, bathrooms, etc
- Switching: After disconnecting the power, short-circuit the "DIST" pad on the back and turn it back on to take effect

6、 Installation and Debugging

6.1 Best installation location:

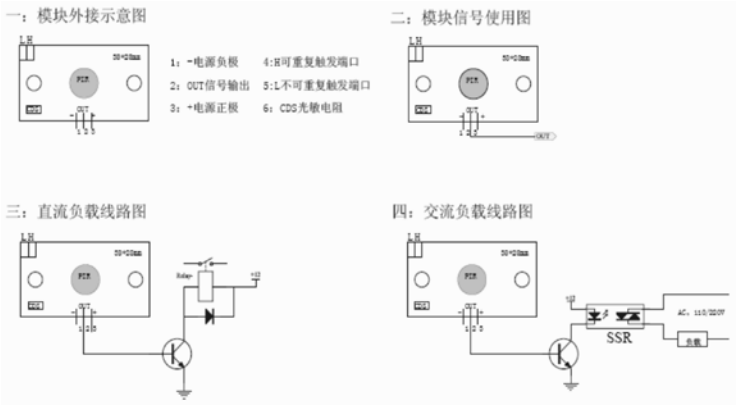
- **Height:** 2.0-2.5 meters
- **Angle:** The lens tilts downwards by 15-30 °
- **Avoid:** air conditioning vents, direct sunlight windows, pet activity areas

6.2 Sensitivity Test:

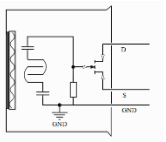
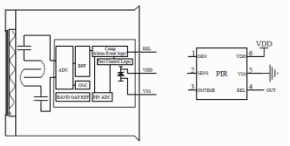
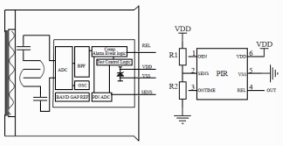
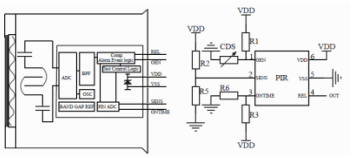
- After powering on, wait for 30s for preheating
- Walk slowly within the sensing area and observe the voltage changes at the OUT pin
- If frequent false triggering occurs, check for heat source interference or reduce installation height

7、 Typical application scenario circuit

7.1 Using circuit diagrams:



7.1 Internal Equivalent and Typical Application Circuits of Sensors:

GH718A/C	GH7183	GH7184	GH7186
			

7.2 Battery powered smart lights:

- Battery (3.6V) → VCC
- OUT → MOSFET gate → LED strip negative pole
- GND → Battery negative pole

Features: No MCU required, pure hardware implementation of induction switch

7.3 IoT Reporting Plan:

- OUT → ESP32 GPIO
- VCC → 5V/3.3V
- GND → GND
- ESP32 → Report MQTT via Wi Fi → Cloud/Mobile App

Features: Low power consumption throughout the entire chain, supporting remote monitoring

8、 Precautions

Nstallation taboos

- It is strictly prohibited to expose the module to glass windows that are directly exposed to sunlight
- Keep away from cold and heat sources (air conditioning, electric heaters, humidifiers)
- Avoid installing on surfaces with strong vibrations

- **Electrical safety**
  - The power supply voltage must not exceed 20V
  - OUT pin driving capability ≤ 5mA, please connect an external MOS transistor when driving large loads
  - The first power on requires an initialization time of 30s
- **Environmental constraints**
  - The detection is for a moving human body, which may not be triggered by stationary or slow movement
  - The sensing distance of high temperature environment in summer will slightly shorten
  - Pets may trigger sensing, it is recommended to install it at a height that pets cannot reach

9、 Ordering and Customization

model	Size/Packaging	weight	packaging	scene
GH718A	45×37×13mm	6g	Static bag+paper box	Industrial and security
GH718C	35×30×14mm	5g	Static bag+paper box	Consumer IoT devices
GH7183	TO-5 metal casing	1.2g	Static bag+paper box	Consumer IoT devices
GH7184	TO-5 metal casing	1.2g	Static bag+paper box	Consumer IoT devices
GH7186	TO-5 metal casing	1.3g	Static bag+paper box	Consumer IoT devices

Supply cycle: In stock inventory, batch of 5000PCS with a lead time of 2 weeks

Standard model: GH718 (default distance of 7 meters, non repeatable trigger)

Customization options:

- Delay time: 3 seconds -10 minutes customizable
- Ensing distance: customizable up to 12 meters
- Output methods: PWM dimming, relay drive, etc

Development support: Provide ESP32/Arduino/STM32 sample code, 3D shell model, MQTT protocol reference

After sales service: one-year warranty, free technical support

Manufacturer information:

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