Intelligent Infrared Reflective Bathroom Induction Switch

Introduction

Intelligent infrared reflective bathroom induction switch is controlled by microprocessor (MCU). It can be programmed online to meet the application requirements and use scenarios of different bathroom products, such as faucets, urinals, toilet flushers, induction water tanks, medical switch faucets, showers, etc.

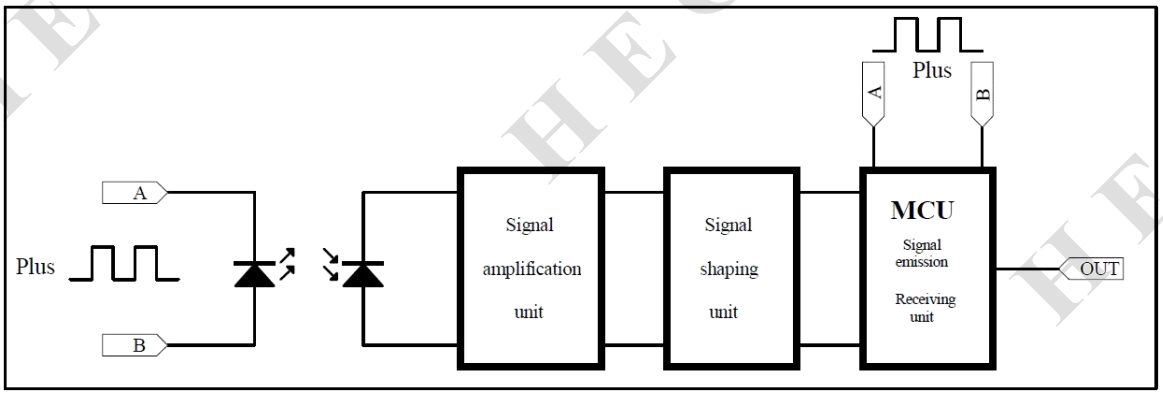
This product integrates infrared receiver, transmitter, MCU, signal processing unit and output control unit. It has strong anti-photoelectric interference ability, stable and reliable performance, low power consumption and small size.

The overall dimensions, sensing distance and sensing range of the product can be customized according to customer requirements.

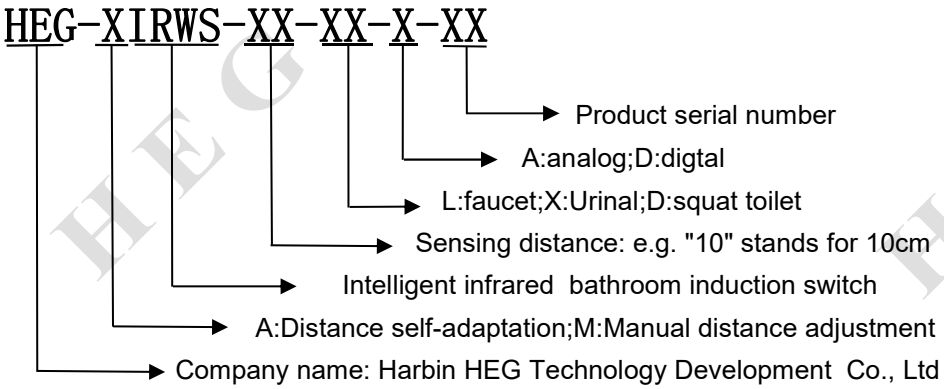
Working Principle

The infrared transmitter emits coded infrared signals. When the detection direction encounters obstacles (reflecting surface, usually human hands), the reflected infrared light is received by the receiving device, processed by the signal processing unit, and then enters the MCU for calculation and processing. When it is determined that there are obstacles in front, the control signal is output to control the opening and closing of bathroom products, such as water outlet and water closing of faucets.

Functional Block Diagram



Model Naming Rules



Product Features

1、Volume: A variety of sizes and shapes are available;

2、Sensing angle:Based on the sealing and testing capability and advantages of photoelectric devices of our company, we can customize photoelectric devices of various optical angles to get the induction switch with a larger induction Angle. Large Angle induction switch can avoid the shortcomings of induction failure and poor user experience caused by too small induction Angle;

3、Low power consumption: Average working current is less than 20μA;

4、Sensing distance (hand): faucet:5-30cm, urinal and squat toilet:5-80cm,adjustable,Please see test method for details;

5、Light immunity: Strong immunity to ambient light.

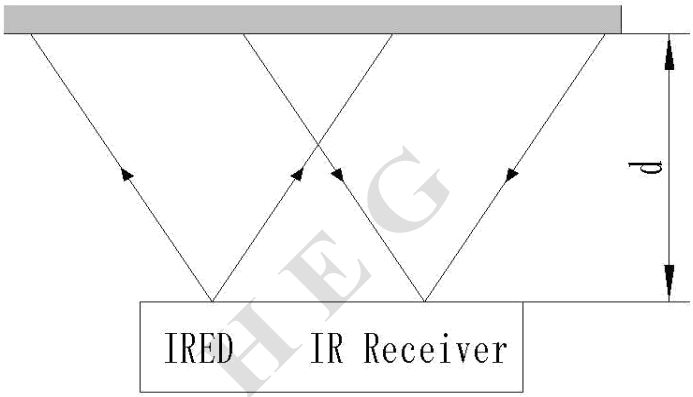
6、Functional mode:The three modes of "faucet", "urinal" and "squat toilet" are integrated into a whole, and the modes can be switched through the remote control keys.

Main Technical Parameters of Products

Main Parameter	Numerical Value	Unit	Remarks
Operating Voltage (DC)	4.4-6.5	V	Four 1.5V dry batteries or 5V switching power supply are recommended
Average Working current	≤20.0	μA	Test conditions: VDD=6.5V Detection period:320ms
Infrared Wavelength	940	nm	IF=20mA
Signal Output Mode	GPIO,width 40	ms	Customizable
Output Drive Capability	1.8	A	Test conditions: VDD=6.5V
Supply Voltage Detection	Below 4.4V, the LED flashes once every 2s, the circuit no longer works, and the battery needs to be replaced	/	/

Outline Dimension	A variety of sizes and shapes are available.	/	Customizable
Port	5P waterproof port	mm	Customizable
Inductive Distance	Faucet:5-30cm Urinal and Squat toilet:5-80cm	cm	Test conditions:VDD=4.4-6.5V; Panel transmittance ⩾ 80%; It can be adjusted by remote control
Sensing Angle	10-60	degree	Customizable angle

Test Method



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Instructions for Product Use

The sensor has three working modes, which can be switched by the "faucet", "ordinary big rush" and "ordinary small rush" buttons of the infrared remote controller. Switching method: Press the corresponding mode button of the remote controller, and after the sensor indicator flashes once, release the button of the remote controller. At this time, the sensor function switching is finished.

Faucet mode(faucet)

Functions are as follows:

1.When a human hand approaches the sensor and is triggered, an solenoid valve opening signal is output, meanwhile, the indicator lamp flashes once, and when the human hand leaves the sensor, an solenoid valve closing signal is output;

2.The red indicator flashes once every two seconds when a human hand is sensed, and goes out when there is no sensing;

3.When the water continues to flow for more than one minute, the sensor automatically outputs a solenoid valve closing signal to prevent an obstacle from triggering by mistake and causing the faucet to continue to flow.

Induction distance:5-30cm,adjustable(K1 open circuit).

Scheme No.1: The sensor can be triggered to enter the automatic learning mode through the "automatic distance" button of the infrared remote controller to adjust the detection distance of the

sensor in real time, and the method is as follows:

1.Place the obstacle/hand in the position to be adjusted and keep it still; Align the remote controller with the induction switch and press the "Automatic Distance" button;

2.When the red light flashes quickly, the induction switch enters the distance adjustment state to keep the obstacle/hand in a static state;

3.When the indicator light flashes slowly, the distance adjustment of the induction switch is successful;

4.When the adjustment distance exceeds the maximum sensing distance of 30cm, the sensing switch keeps the original distance.

Scheme No.2: The sensing distance can be manually adjusted by potentiometer.

Urinal mode(ordinary small rush)

Functions are as follows:

1.When the human body enters the induction range for 3 seconds, perform the first rush for 2 seconds; When the human body leaves, carry out a tail flush for 6 seconds;

2. When the human body is sensed, the red indicator flashes every 2 seconds;

3.When there is no sensing, the indicator goes out; When the first solenoid valve is turned on, the indicator light flashes once;

4.Flush automatically every 24 hours for 6 seconds to prevent the water in the trap pipe from drying up, resulting in odor back;

5.Press the manual switch every time: automatically flush the water for 6 seconds; (optional)

Induction distance:5-80cm,adjustable(K1 short circuit),Adjustment method is the same as faucet mode.

Squat toilet mode(ordinary big rush)

Functions are as follows:

1.When the human body enters the induction range for 3 seconds, perform the first rush for 2 seconds; When the human body leaves, carry out a tail flush for 10 seconds;

2.When the human body is sensed, the red indicator flashes every 2 seconds;

3.When there is no sensing, the indicator goes out; When the first solenoid valve is turned on, the indicator light flashes once;

4.Flush automatically every 24 hours for 10 seconds to prevent the water in the trap pipe from drying up, resulting in odor back;

5.Press the manual switch every time: automatically flush the water for 10 seconds; (optional)

Induction distance:5-80cm,adjustable(K1 short circuit),Adjustment method is the same as faucet mode.

Product outline size(optional,Customizable)