



ED158S

Product Specification
(Ver1.1)

Brief Introduction

ED158S Radar motion sensor module is designed based on the Doppler principle, it transmits the high frequency electromagnetic wave through the antenna and receives the reflected wave. Based on this principle it judges the movement of the object within the coverage range, and feedback corresponding electricity signal.

It is widely applied in motion sensor lighting, security, small household electrical appliances, smart home, automatic door control switch, greeting device and other products, as well as garage, corridor, courtyard, balcony, bathroom and other places that need automatic motion sensor control.



Feature & Advantage

- Compared with PIR module, microwave motion sensor is better -- more wide detection range, no dead area, no lens, no lens aging problem, no environment interference
- Strong anti-interference ability -- It is not affected by temperature, humidity, airflow, dust, noise, brightness and other factors
- Microwave can penetrate Acrylic, glass or thin non-metal materials
- Built-in MCU, embedded multiple digital filtering algorithm, higher anti-interference ability
- Complying with environmental requirements

Characteristic Description



Distance
Customize



Daylight
Optional

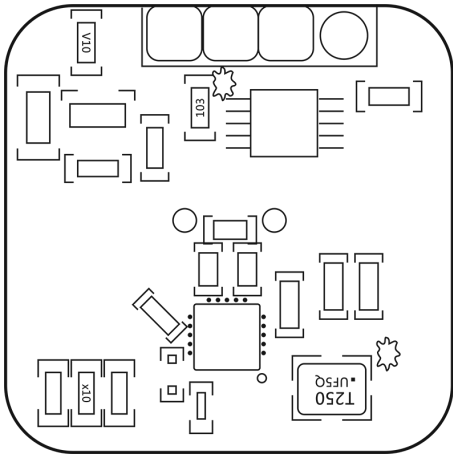


Delay Time
Customize



Various Output
Modes

Structural Drawing

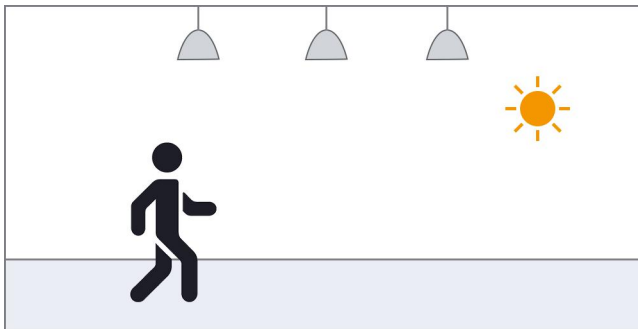


bottom view

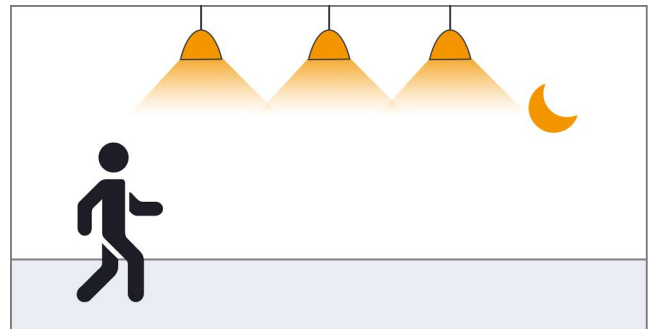


top view

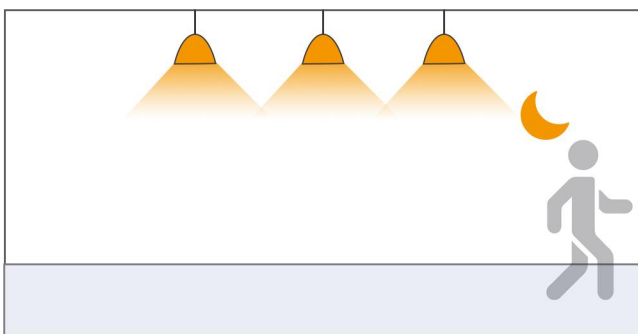
Application Demo



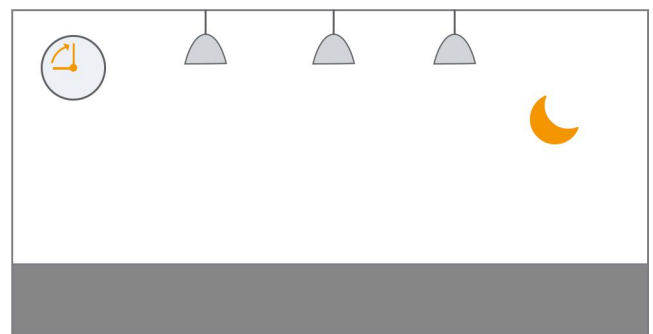
The light does not trigger on when detect moving object with the ambient brightness is enough



The light triggers on when the sensor detect moving object with the ambient brightness is lower than the preset threshold of photo-transistor



After the moving object leaves or object keep still during delay time cycle, the light will keep lighting on till delay time cycle over



After the preset delay time over and no moving object detect, the light will automatically off

Application Place

It is widely applied in motion sensor lighting, security, small household electrical appliances, smart home, automatic door control switch, greeting device and other products, as well as garage, corridor, courtyard, balcony, bathroom and other places that need automatic motion sensor control.



Garage



Corridor



Washroom



Bedroom

Parameter Specification

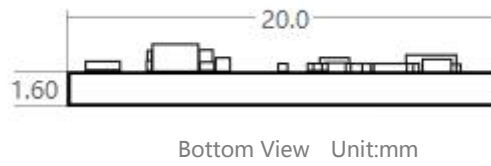
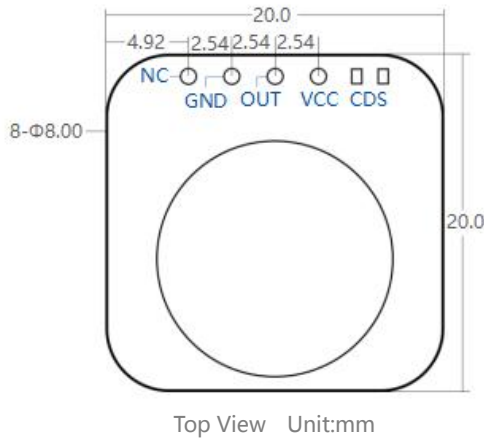
Parameter	Minimum	Typical	Maximum	Unit	Notes
Transmit Frequency	5.725	5.8	5.875	GHz	-
Input Voltage	6	8	12	V	-
Output High level	4.5	-	5	V	I _{OH} =30uA
Output Low level	-	-	0.5	V	I _{OL} =50uA
3db Beam Angle	-	97	-	°	XZ Plane
	-	99	-	°	YZ Plane
Working Current	35	39	42	mA	CW Model
Detect Distance	4	5	6	m	Remark 1
Delay Time	27	30	33	s	Remark 2
Threshold	-	-	-	Lux	Remark 3
Working Temp.	-25	-	85	°C	-
Storage Temp.	-50	-	125	°C	-

Remark 1:The hang up height of ED158S is 3 meters, the detect distance data is based on the ground sensing range radius

Remark 2:Delay time can be customized according to customer demand

Remark 3:Photo transistor threshold can be customized,also photo transistor is optional

Dimension & Pin Assignment

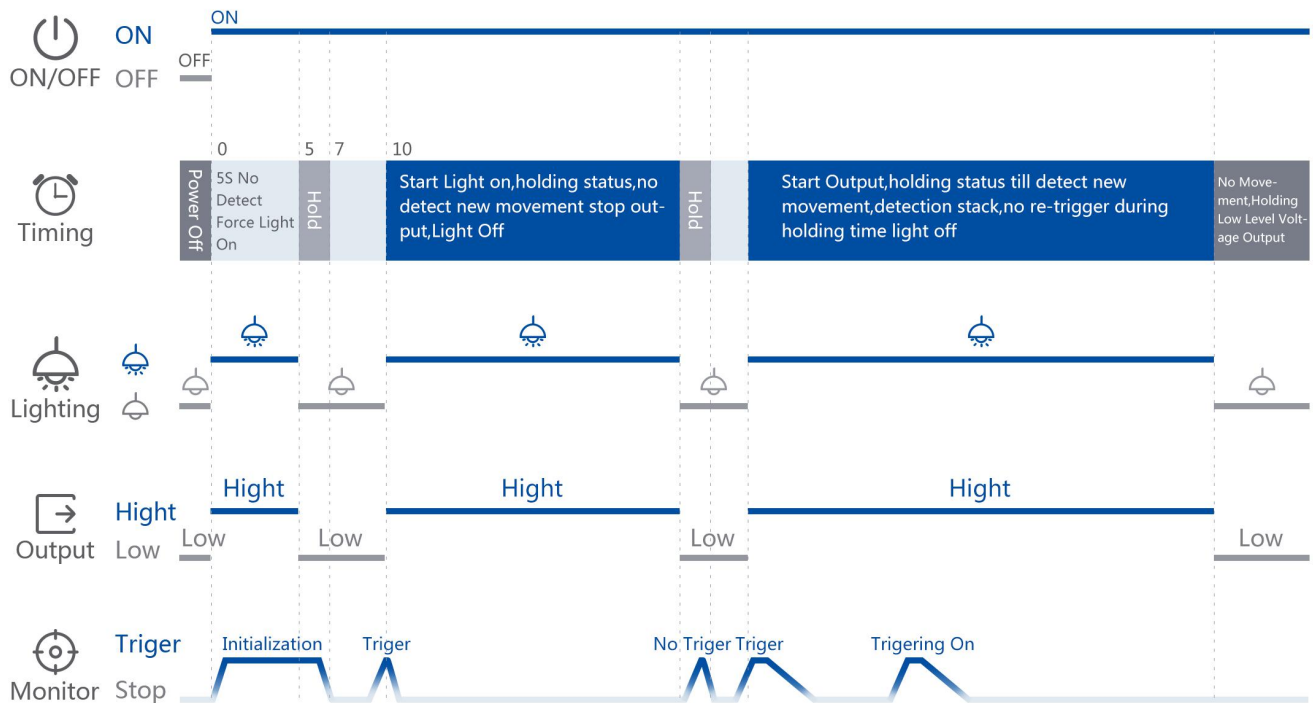


VCC:Power Supply OUT:Output Signal GND:Ground CDS : photo transistor

Attentions

- Avoid installing together with metal accessories or shell,when install microwave motion
- sensor,metal will absorb microwave and affect the effect. Avoid large current circuit cover of the antenna surface, which may lead to interference.
- Please use power supply circuit with tiny ripple current, especially the low frequency ripple, which disturb the sensor's work easily.The recommend filter E-cap more than 100uF
- The output current of the sensor is very weak, If driver too large current easy to cause misinformation. Better us drive the load by isolation drive, and can also use MCU to read the output state.
- The recommended installation space of sensors is more than 1.5m

Output Square Wave Sequence



Typical Application

- One of the light applications as follow

To satisfy FCC exterior labeling requirements, the following text must be placed on the exterior of the end product "Contains Transmitter module FCC ID: 2ARDMED158S". The modular must be installed in the host that assign by Foshan Electrical&Lighting Co.,Ltd. as below, if other host types used would need further evaluation and possible C2PC if they are not significantly similar to the one tested.

- Host information

company name : Foshan Electrical&Lighting Co.,Ltd.

Product name: ceiling light

model name: 24W

Naming Rules

ED	Type	Item No	Antenna Type	Configuration No	Delay Time	Holding Time	Version
ED	1	58	S	Y	30s	2s	R1
<input checked="" type="checkbox"/>	1Radar Module	58	<input checked="" type="checkbox"/> S Single Layer Antenna	<input checked="" type="checkbox"/> Y With LDR	30s	2s	R1
<input type="checkbox"/>	2Radar Switch		<input type="checkbox"/> D Stacked Antenna	<input type="checkbox"/> N No LDR			
			<input type="checkbox"/> H High Precision Antenna	<input type="checkbox"/> P Programming			
			<input type="checkbox"/> C Ceramic Antenna				

FCC warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.


MODIFICATION: Any changes or modifications not expressly approved by the grantee of this device could void the user’s authority to operate the device.


Label statement:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired

Additional Remarks

 Warning: IFI/IFQ output signal is sensitive to ESD(electrostatic damage),if exposure to high electrostatic or power source areas may cause irreversible damage to the radar module

 Recommendation: It is recommended to use a qualified DC voltage stabilizing power supply.That is, DC voltage, current, and ripple coefficient that are all up to the standard, otherwise it will affect the stability of this product and may cause some anomalies, such as: false alarm, no detection, circulation, self-start, etc.

Attentions

- 1.The installation process requires to keep a certain height between the antenna plate from the metal plane, can not cling to or touch the metal plane, otherwise the product may not work properly!
- 2.Avoid installing together with metal accessories or shell,when install microwave motion sensor,metal will absorb or block microwave and affect normal detection.Therefore, this product should not be installed in the metal shell for use. However, such as plastic, ceramic, and Woody earth obstacles, the penetration effect is relatively good;
- 3.Please use power supply circuit with tiny ripple current, especially the low frequency ripple, which disturb the sensor's work easily.
- 4.The output current of the sensor is very weak, If driver too large current easy to cause false alarm. Better drive the load by isolation drive, and can also use MCU to read the output state.
- 5.The recommended installation space of sensors is more than 1.5m,and the installation distance is too close may cause individual cycle misstatement;
- 6.Avoid large current circuit cover of the antenna surface, which may lead to interference.



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