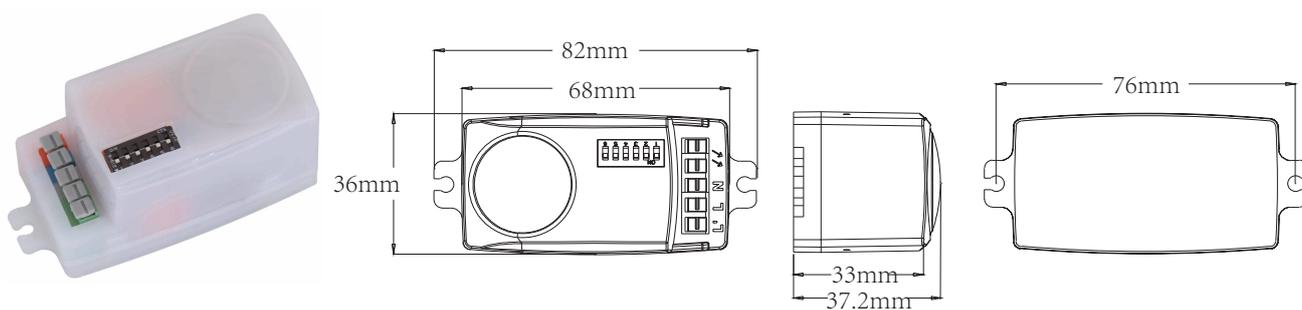


# PD-MV1016B Microwave Sensor Instruction



## Summary

This is a hi-precision digital microwave sensor whose detection range is 360° and working frequency is 5.8GHz. It is based on Doppler principle which integrates the emitting and receiving. It adopts MCU (Micro Control Unit) that greatly increases its precision and decreases its fault rate. It's delicate in appearance and compact in structure. It can be independently connected to the loads or easily installed inside the lightings with lampshade made of glass or plastic. It is widely applied in the passageway, washroom, elevator, household or other public areas for security protection or energy saving. It applies for several technical patents and is the perfect choice for your intelligent living.



EN 61058-1:2002+A2:2008  
EN 50317:2002  
EN 301 489-1 V1.8.1(2008-04)  
EN 301 489-3 V1.4.1(2002-08)  
EN 300 440-1 V1.5.1(2009-03)  
EN 300 440-2 V1.3.1(2009-03)

## Features

- 1.Non-radiation harm:** its transmitter power is lower than 0.3mW, which does no harm to human body.
- 2.Reliable & Stable performance:** it applies the RC filtering and digital filtering in digital processing. It also uses the digital zero trigger technology, that is, at zero point it will be auto-connected or auto-disconnected. It uses the Tyco high-power relay to control output, which ensures its reliable performance. It adopts power management chip to guarantee its stable performance in 100-240V/AC.
- 3.Remote setting:** it is designed with the remote function, that is, you can preset its function by DIP switch or remote controller to your practical need. **You can easily set and select the function within 12 meters.**
- 4.Slowly on and off:** it is added with PWM controlled optical coupler working with the specialized controlled power to achieve the slowly on and off, that is, when signal detected, the light controlled will be slowly on and will be slowly off if there is no signal detected during the preset delay time. It protects human from the unfitness caused by the sudden light or darkness.

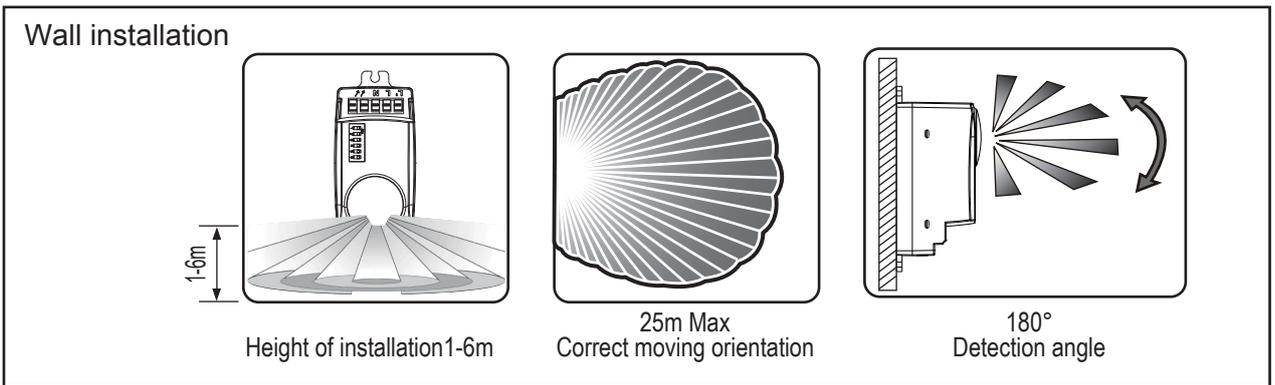
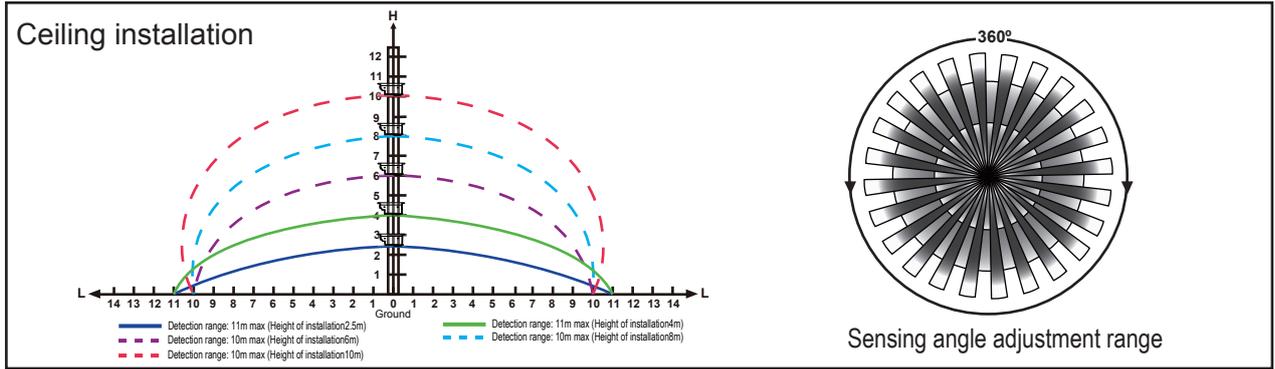
## Specifications

Power source: 100-240V/AC  
Power frequency: 50/60Hz  
Transmission power: <0.3mW  
Rated load:  
2400W/10A, Max, tungsten ( $\cos\phi=1$ )(220-240V/AC)  
1500W/8A, Max, fluorescent ( $\cos\phi=0.5$ )(220-240V/AC)  
1200W/10A, Max, tungsten ( $\cos\phi=1$ )(100-130V/AC)  
800W/8A, Max, fluorescent ( $\cos\phi=0.5$ )(100-130V/AC)  
Working temperature: -15°C~+70°C  
Protection level: IP20, Class II

Installation sit: indoors, ceiling mounting  
HF system: 5.8GHz CW electric wave, ISM band  
Detection angle: 360°(Ceiling installation),  
180°(Wall installation)

Detection range:  
1m-3m-6m-11m (radii.) (adjustable)(Ceiling installation)  
25m Max. (adjustable)(Wall installation)  
Time setting: 8sec-1min-5min-12min, (adjustable)  
Light-control:  
10LUX-50LUX-200LUX-1000LUX, (adjustable)  
Power consumption: approx.0.5W

# Sensor information

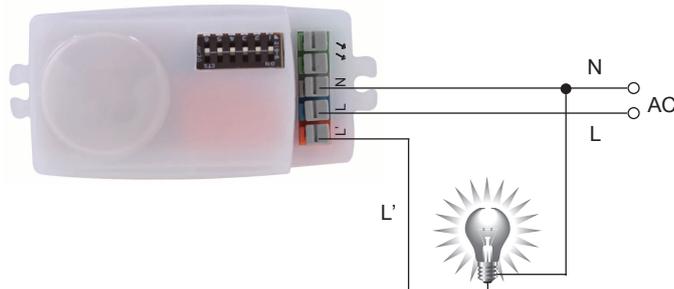


# Applications

Microwave can penetrate the glass, plastic and wood, thus the microwave sensor can be installed inside the shade made of certain thickness of glass, plastic or wood. For example, the application in lightings, only if making connection as below shown can you change the common lightings into auto-sensing lightings.

< Connect N, L with power; Connect N, L' with load. >

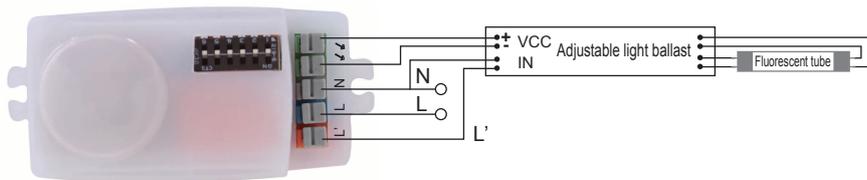
Connection mode one:



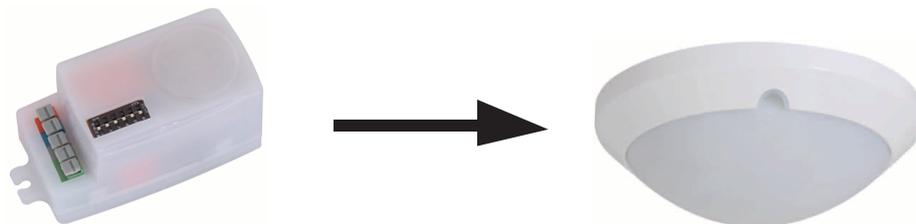
## Load type

- CFL Energy-saving lamp
- Security alarming system
- Pure resistive load

Connection mode two:



- Fluorescent lamp
- LED Light source

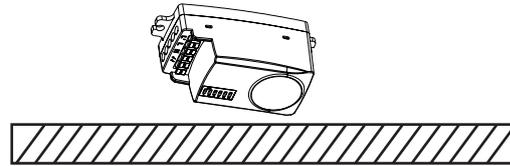


The above application inside the lightings is one of multiple practical utilizations. You can also install one or more inside the ceiling or floor to control the whole passageway.

**Friendly reminder: when installing two or more microwaves together, you are required to keep 4 meters one from another, otherwise the interference among them will lead to error reaction.**

**Warning!**

Microwave will be reflected by the metal, thus the microwave sensor cannot be installed inside the shade made of metal, or it won't work normally.

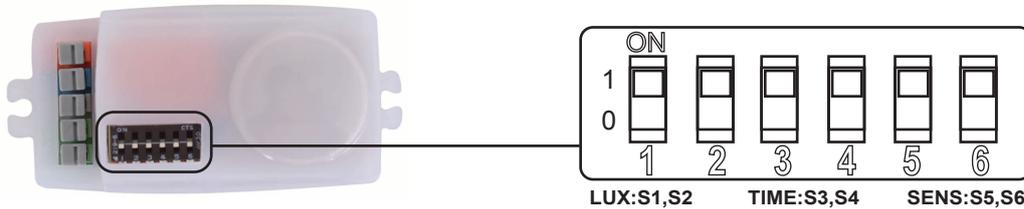


**Nonmetals**

When installed inside the ceiling or floor, the microwave sensor fails to distinguish the ambient light intensity automatically.

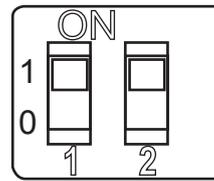
## Setting manner one: DIP switch

As below shown, by S1,S2 to set the light-control value, S3,S4 the delay time, S5,S6 the detection range. It may take times to adjust values before they satisfy your need.



### (1)Light-control setting

It can be defined in the range of 10~1000 LUX. To set the switch to ON is "1", to OFF is "2". Read through the right shown the corresponding table of the switch position to the light-control value.

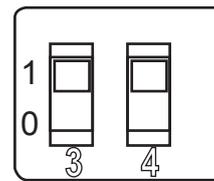


**LUX:S1,S2**

S1	S2	Light-control
0	0	10LUX
0	1	50LUX
1	0	200LUX
1	1	1000LUX

### (2)Time setting

It can be defined from 8 seconds to 12minute. Any movement detected before this time elapse will re-start the timer. It is recommended to select the shortest time for adjusting the detection range and for performing the walk test. To set the switch to ON is "1", to OFF is "2". Read through the right shown the corresponding table of the switch position to the delay time.



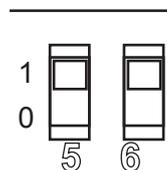
**TIME:S3,S4**

S3	S4	Time setting
0	0	8s
0	1	1min
1	0	5min
1	1	12min

**It is mainly for the adjustment of the delay time from the moment the signal detected and light auto-on till the light auto-off. You can define the delay time to your practical need. But you'd better lower the delay time for the sake of energy saving, since the microwave sensor has the function of continuous sensing, that is, any movement detected before the delay time elapses will re-start the timer and the light will keep on only if there is human in the detection range.**

### (3)Detection range setting (sensitivity)

Detection range is the term used to describe the radii of the roughly circle casting on the ground when installed at the height of 2.5 m. To set the switch to ON is "1", to OFF is "2". Read through the right shown the corresponding table of the switch position to the detection range.



**SENS:S5,S6**

S5	S6	Detection range
0	0	1m
0	1	3m
1	0	6m
1	1	11m

**Notice:** when using this product, please adjust the sensitivity (detection range) to an appropriate value but the maximum to avoid the abnormal reaction caused by the easy detection of the wrong motion by the blowing leaves & curtains, small animals or the interference of power grid & electrical equipment. All the above mentioned will lead to the error reaction. When the product does not work normally, please try to lower the sensitivity appropriately, and then test it. Human movement will cause the sensor induction, so when you under the function testing, please leave the induction region and don't make movement to prevent the sensor continuous work.

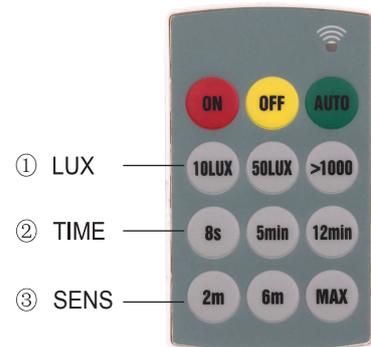
**Friendly reminder:** when installing two or more microwaves together, you are required to keep 4 meters one from another, otherwise the interference among them will lead to error reaction.

## Setting manner two: Remote control

ON: press ON, the load connected will keep working for 6 hours and then automatically turn to AUTO mode.

OFF: press OFF, the load connected will be off for 6 hours and then automatically turn to AUTO mode.

AUTO: press AUTO, sensor enters the auto-detecting mode, that is, when signal detected and the ambient light intensity is lower than the preset value, the load works.



**Friendly reminder:** there are two manners to define its function and the last definition will be effective and still be valid even if the sensor restarts.

**! Warning!** The following situations will lead to error reaction.

- 1、 Being installed on the rocking object will lead to error reaction.
- 2、 The shaking curtain blown by wind will lead to error reaction. Please select the suitable place to install.
- 3、 Being installed where the traffic is busy will lead to error reaction.
- 4、 The sparks produced by some equipment nearby will lead to error reaction.

## Fault and the solution

Fault	Failure cause	Solution
The load fails to work.	Light-illumination is set incorrectly.	Adjust the setting of the load.
	The load is broken.	Change the load.
	The power is off.	Turn the power on.
The load works all the time.	There is a continuous signal in the region of the detection.	Check the settings of the detection area.
The load works when there is no motion signal detected.	The lamp isn't installed well so that sensor fails to detect reliable signals.	Re-adjust the installation place.
	Moving signal is detected by the sensor (movement behind the wall, the movement of small objects, etc.)	Check the settings of the detection area.
The load fails to work when there is motion signal detected.	The motion speed is too fast or the defined detection area is too small.	Check the settings of the detection area.

 **Warning!**

- Please confirm with professional installation.
- For safety purposes, please cut off power before installation and removal operations.
- Any losses caused by improper operation, the manufacturer does not undertake any responsibility.

We are committed to promoting the product quality and reliability, however, all the electronic components have certain probabilities to become ineffective, which will cause some troubles. When designing, we have paid attention to redundant designs and adopted safety quota to avoid any troubles.

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