

Specification

Product series: High-mounting PIR motion sensor (DALI+PUSH version)

Product model: MSA050 IR

Product version: V1.0

Version	Release Date	Revise record	Publishing
V1.0	2024.01.12	Initial release	Jacky

【Product description】

MSA050S IR is a high-mounting PIR motion sensor with daylight detection function. Combined with the unique software algorithm of Merrytek, it can accurately detect human movements in almost all high-mounting scenario to control lighting automatic ON/OFF or dimming in warehouse,lobby,workshop etc.

【Product Feature】

- PIR motion detection
- DALI dimming signal output available
- Push switch/dimming output available
- Daylight sensor on/off control available
- Daylight harvesting control available
- Detection area,hold time and daylight threshold can be set by remote/DIP switch
- Max detection range: 8-10m in diameter
- 10m max mounting height
- Warehouse,workshop and lobby motion detection highly recommended
- Flush mounting,surface mounting and 86 box mounting available

【Dimension】

- Product size: 105x105x90.8mm(flush mounting)、105x105x65.8mm(surface mounting)
- Connection interface: 6-pin terminal

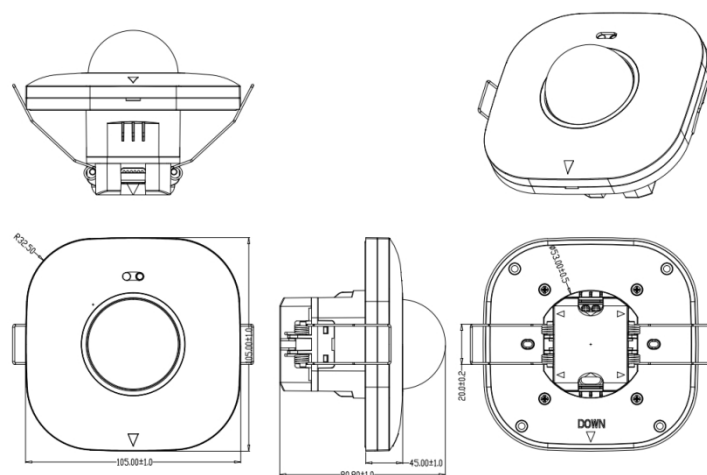


【Parameter】

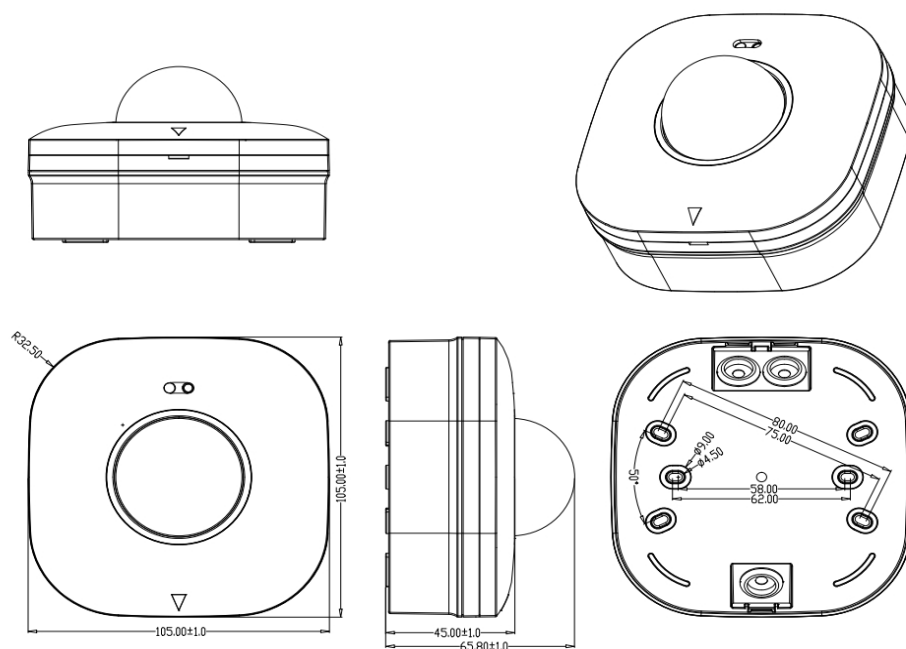
Input/Output	Input voltage	220-240V AC
	Rated voltage	220V AC
	Working current	20mA max
	Power consumption	≤0.5W @220/230V AC
	Output signal	DALI+PUSH DALI terminal: DA+ DA- (Max wire length 300m,Max terminal current 100mA) PUSH terminal: manual dimming+on/off control (Max wire length 15m)
	Max. Surge Capacity	1KV(L/N,EN61000-4-5)
Sensor parameter	Function	PIR motion detection+ daylight sensor
	Daylight harvesting	Available (when daylight harvesting mode is enabled,its dimming range is 10%-100%,and our sensor will automatically be disabled when environment lux is higher than 1000lux and recover enabled when environment lower than 120lux
	Detection Area	DIP /remote setting: 100%/75%/50%/25%
	Hold Time	DIP /remote setting:5s/1min/5min/10min/20min/30min
	Daylight Sensor	DIP /remote setting:50Lux/Disable
	Stand-by dim Level	DIP /remote setting:10%/20%/30%/50%
	Stand-by time	DIP /remote setting:0S/1min/10min/∞
	Radius detection range(based on 100% sensitivity)	4-5m@25℃ based on 8m mounting height
	Remote control	Available
	Mounting height	2.5-10m, typical value:8m
Application environment	Drill hole	Φ55mm
	Working temperature	-25℃...+50℃(detection range might differ based on different temperature)
	Storage temperature	-40℃~+80℃
	Warranty	5 years (available due to product quality problem under indoor application)
Certificate Standard	Certificate	Compliant to CE
	Environmental requirements	Compliant to RoHS
	IP rating	IP20(flush mounting) IP54(surface mounting)
“N/A” means not available		

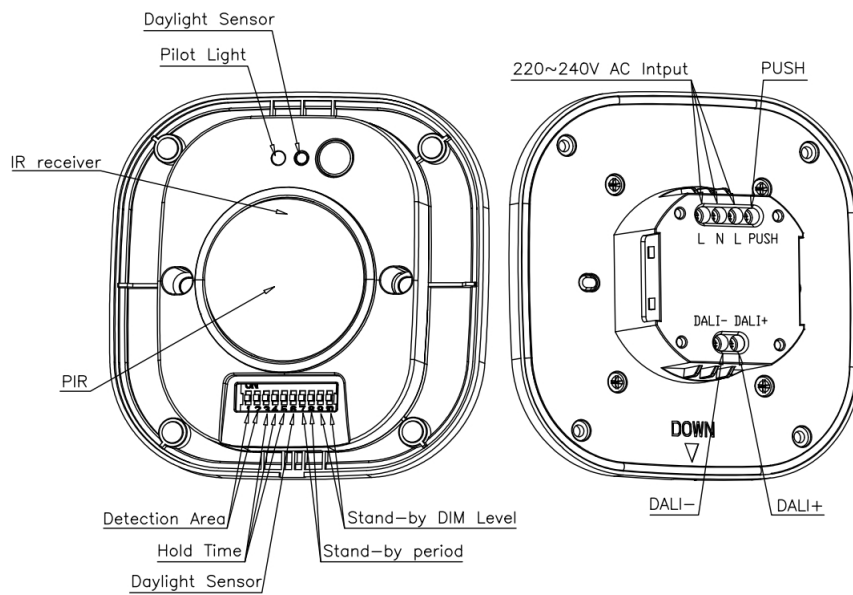
【Dimension and Function diagram】

Flush mounting

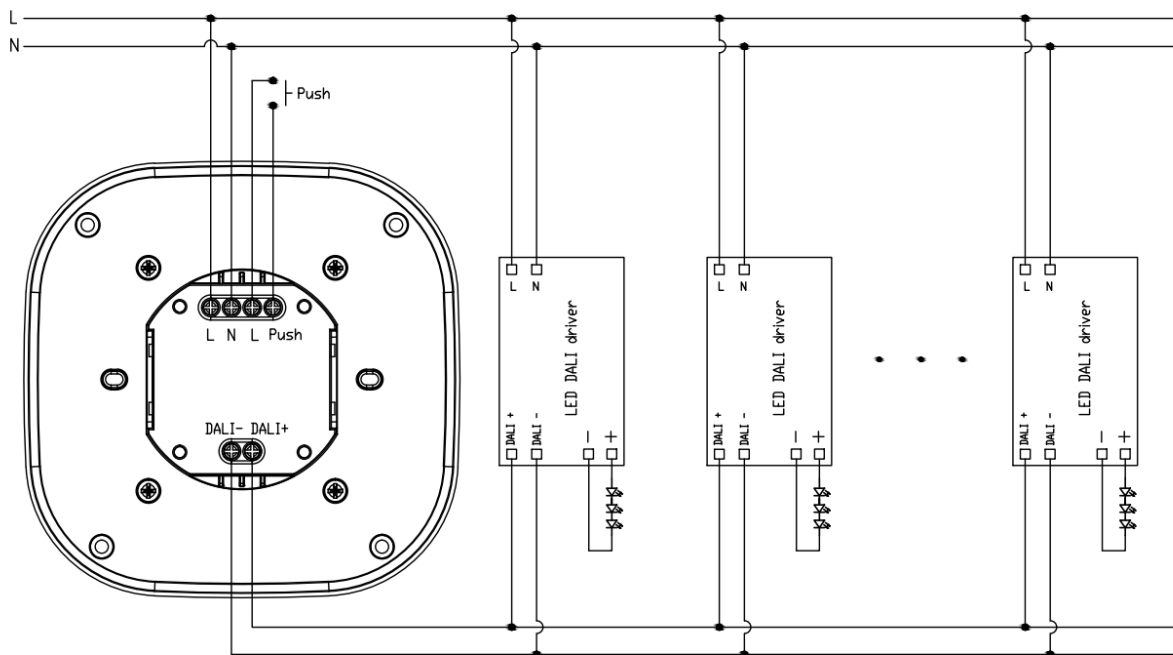


Surface mounting





【Wiring instruction】



Wiring layout suggestion:

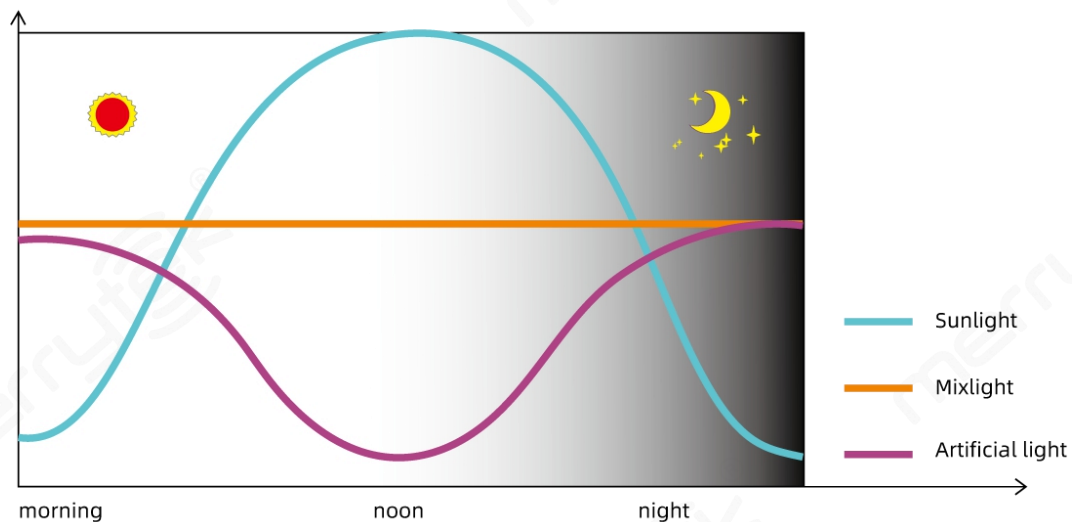
1. LN stands for AC input,DALI+DALI- stands for DALI output,PUSH stands for PUSH output,please wiring correctly
2. DALI terminal wiring length shall no longer than 300m and current not higher than 100mA; PUSH terminal wiring length shall no longer than 15m

【Detection harvesting manual】

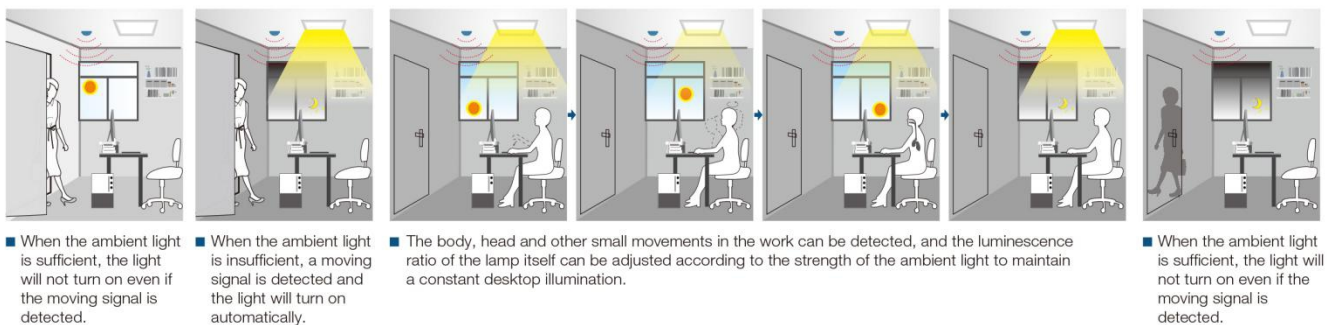
The built-in light sensor can automatically detect the intensity of natural light to adjust the artificial light according to the preset lux level, to maintain target illumination. It can be used in offices, airports, shopping malls and other occasions where the brightness of lamps needs to be adjusted according to sunlight during the day

Note: you shall long press MH10 remote's "DH mode" button more than 3s to start this function, when the load fixtures flash once means the function is enabled successfully. After that you shall press "DIM+" / "DIM-" button to set target lux level. When the setting is successful, when the external natural light becomes dark (brighter), the sensor will increase (lower) the brightness of the lamp to maintain preset target lux level (this status is short in "With DH" in following) .

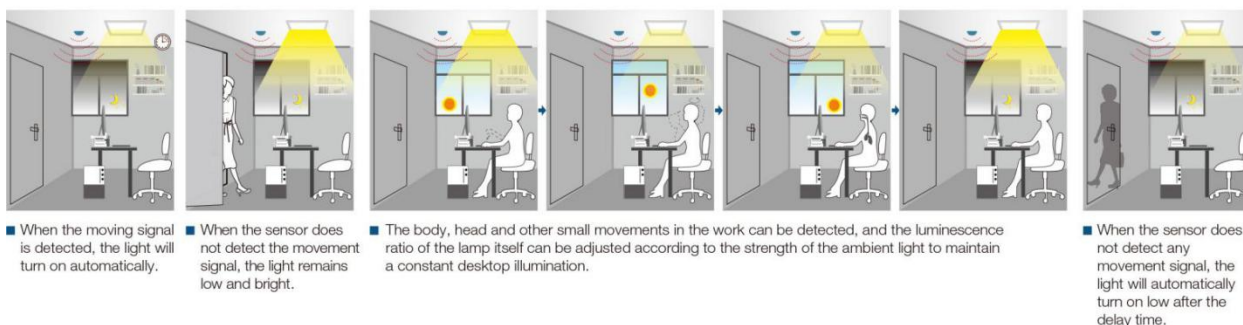
Long press "Override DH" 3s on remote control to override daylight harvesting function, load fixtures flash once means the function is disabled successfully.



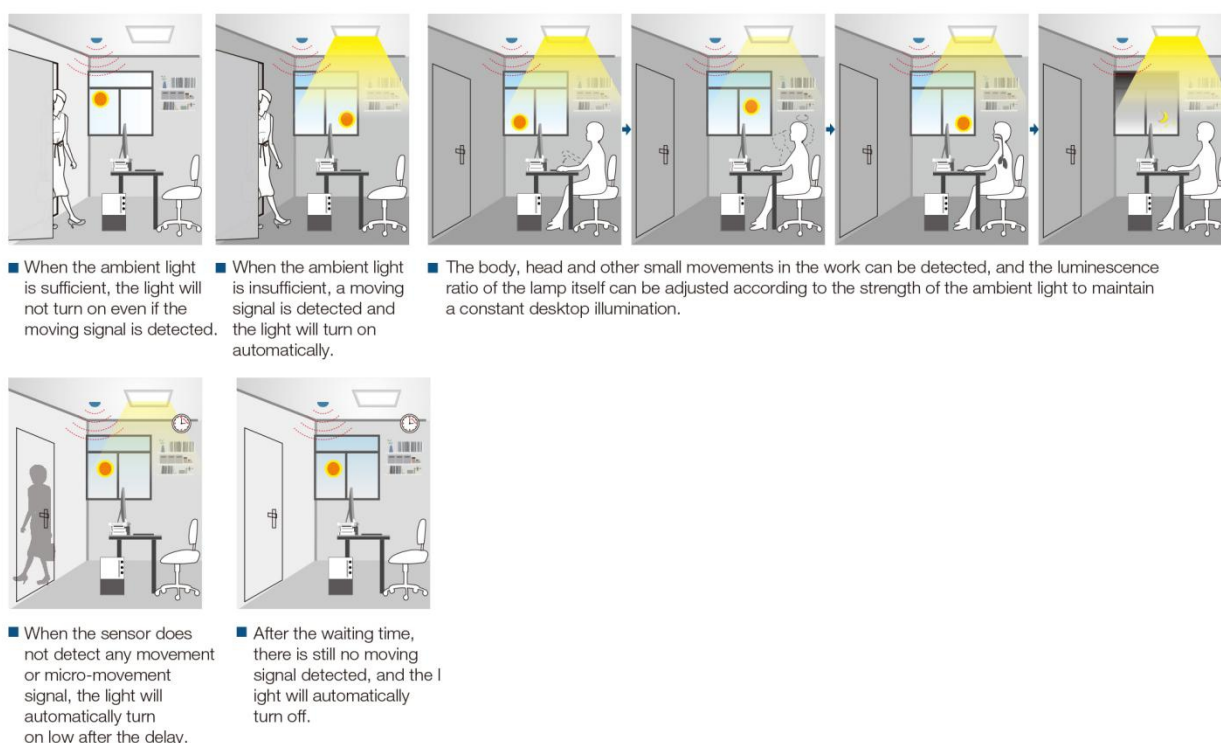
Breath detection on / off function (stand-by period be set to "0s", with DH mode)



Breath detection with 2 step dimming function (stand-by period be set to “+∞”, with DH mode)



Breath detection with 3 step dimming function (stand-by period be set to “1min/3min/10min/30min”, with DH mode)



【Initialization】

When powered on, sensor indicator will turn off after flashing for 10S and will not detect moving signal during this time.

After 30S, you can use our MH10 remote or dip switch to adjust detection area、hold time and daylight sensor etc parameter.

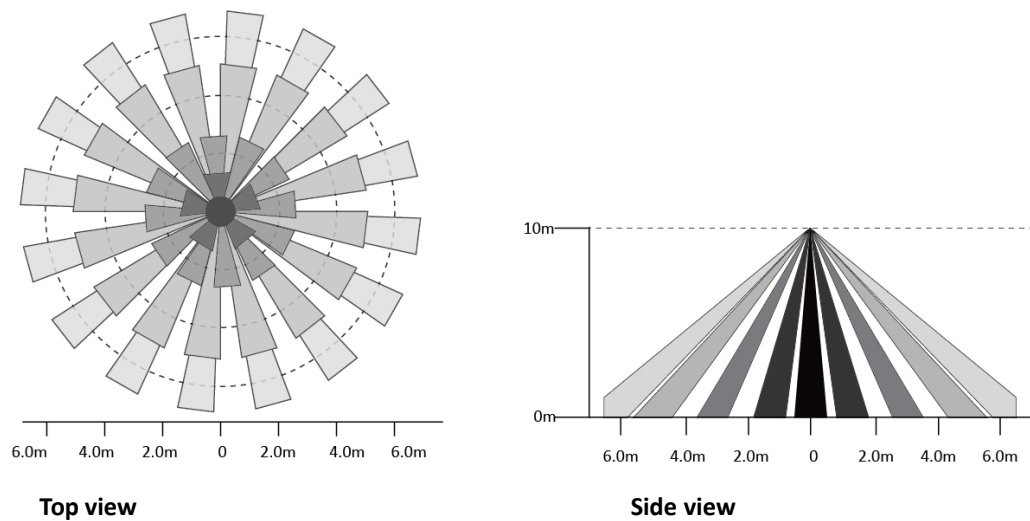
【Factory setting】

Detection Area:100%, Hold Time: 5s, Daylight Sensor: Disable

Indicator: ON standby time: 0s, standby dim level:10%

【Detection radiation】

MSA050 IR is highly recommended ceiling flush mounting and its detection radiation is as below shows:



【Detection Signal】

The product detects human moving signals and below is a description of the moving signals:

- **Moving signal:** detect the human significant moving (walking) in the detection area.

【DIP switch setting】

Detection Area

1	2	
ON	ON	100%
-	ON	75%
ON	-	50%
-	-	25%

Hold Time

3	4	5	
ON	ON	ON	5S
-	ON	ON	1min
ON	-	ON	5min
-	-	ON	10min
ON	ON	-	20min
-	-	-	30min

Daylight Sensor

	6	
I	ON	50Lux
II	-	Disable

*When set Disable,sensor will switch on light when detection motion regardless of ambient brightness level.

Stand-by Period

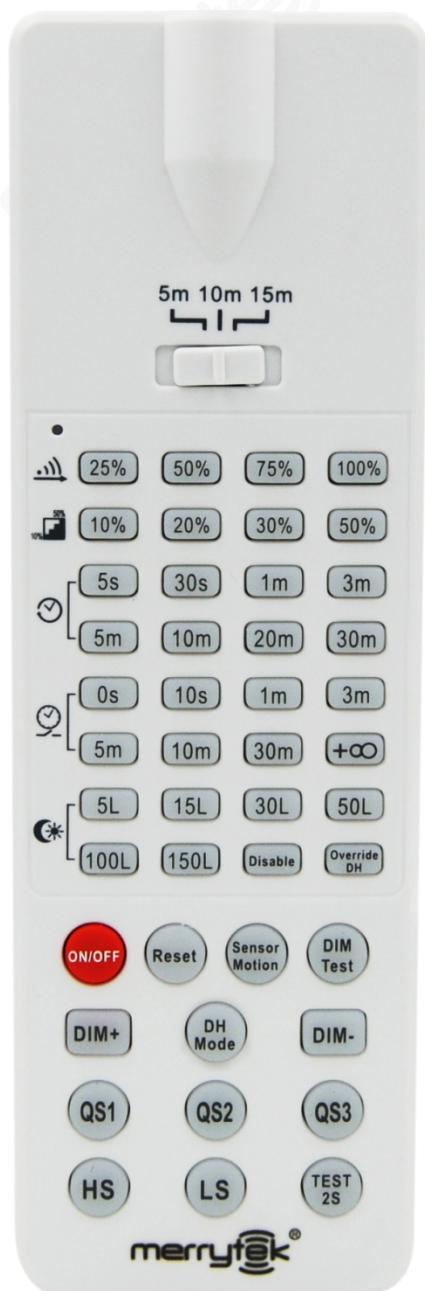
7	8	
ON	ON	0S
-	ON	1min
ON	-	10min
-	-	+∞

Stand-by Dim Level

9	10	
ON	ON	10%
-	ON	20%
ON	-	30%
-	-	50%

【Remote manual】

MH10 remote



Detection area: 25%/50%/75%/100%

Standby dim level: 10%/20%/30%/50%

Hold time: 5s/30s/1min/3min/5min/10min/20min/30min

Standby time: 0s/10s/1min/3min/5min/10min/30min/+∞

Daylight threshold: 5lux/15lux/30lux/50lux/100lux/150lux/Disable
Override DH: long press 3s to disable daylight harvesting function, and daylight threshold function will be available

ON/OFF: disable sense function

Sensor motion: enable sense function

Reset: all parameter back as factory setting

DH mode: Long press 3s to enter daylight harvesting function, after that you can press DIM+/DIM- to set target lux level

HS: turn on indicator

LS: turn off indicator

【Application tips】

1. Our sensor shall be installed by professional electrician under power-off state
2. Our sensor support 10m high installation for indoor use only.And it's strongly suggested installed far away from hot or temperature-change-fast area to avoid false trigger
3. To ensure normal detection,there shall be no big object within our sensor's detection area because our sensor can't detect by penetrating object
4. There shall also no strong-reflect object,wifi router,microwave oven etc before our sensor to avoid false trigger
5. Our sensor's detection area function is based on 25℃ environment temperature,when environment temperature is higher/lower than this temperature,our sensor will be dull/sensitive,such the detection area will be shorter/longer
6. Our sensor's detection area function is based on tangential movement,and become short if you test by radial movement due to PIR character

【Disclaimer】

Due to the complexity of product technology and differences in application environment, it is difficult to guarantee a completely accurate or complete description, so this specification is only for user reference.We will reserve the right to make changes to the product specifications without notifying the user, and do not make any commitments and guarantees in the legal sense. At the same time, our company encourages users to supplement or modify the contents of our specifications after using our products.