

Specification

Product series: High-mounting PIR motion sensor (ON/OFF version)

Product model: MSA250S IR

Product version: V1.0

Version	Release Date	Record	Publishing
V1.0	2026.3.12	Initial version	Jacky

【Product description】

MSA250S IR is a high-mounting PIR motion sensor with daylight detection function. It applies merrytek exclusive super high lens to achieve MAX 30m diameter detection coverage when installed 3-30m. Combined with the unique software algorithm of Merrytek, it can accurately detect human movements in almost all scenario to trigger smart scene application.

【Product Feature】

- PIR motion detection
- Accurate motion detection with one channel ON/OFF output
- Daylight sensor detection available
- Detection area,hold time,daylight threshold etc can be set by rotation switch or remote control
- Max detection range: 30-36m in diameter@10m height/ 6-10m in diameter@30m height
- 26A relay applied,max loading capacity :2000w resistive loading and 1200w inductive loading
- Max 2kV surge capacity
- Lobby,warehouse etc motion detection highly recommended
- Surface mounting available



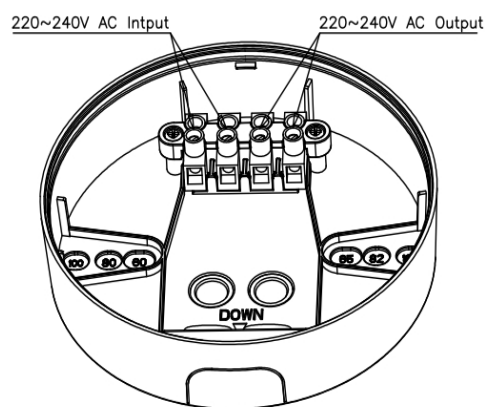
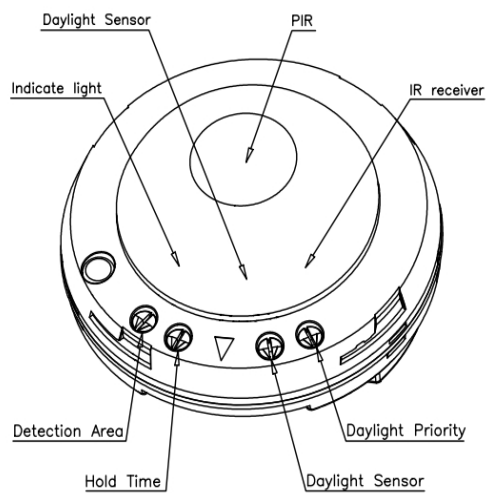
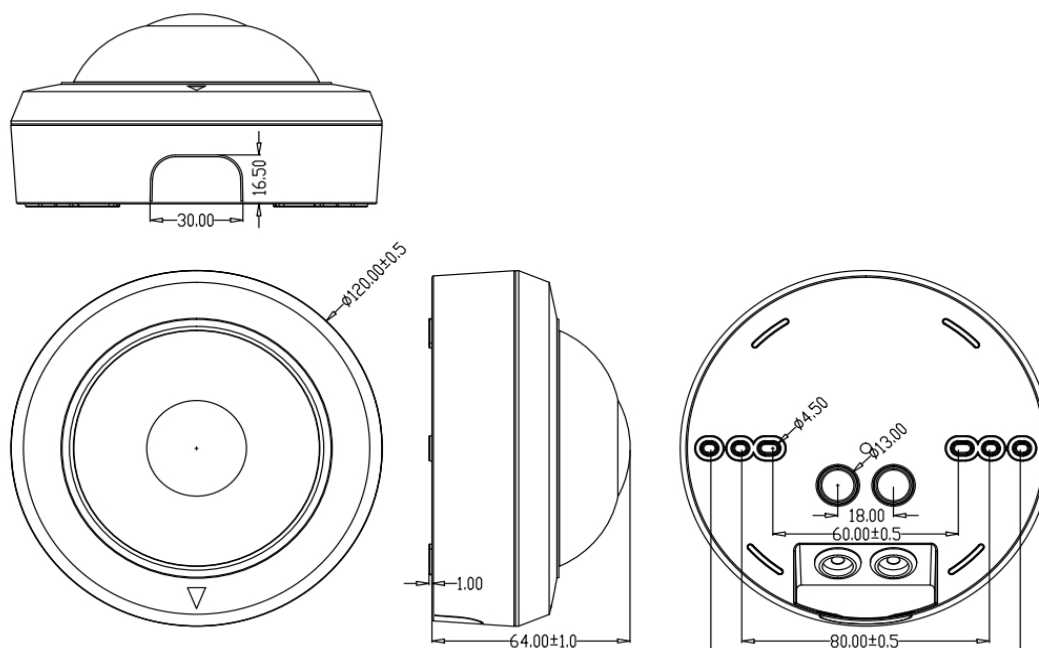
【Dimension】

- Product size:φ120x64mm
- Connection interface: 4-pin terminal

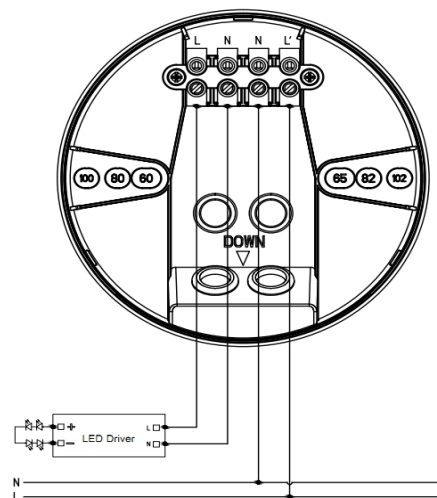
【Parameter】

Input/Output	Input voltage	220-240V AC
	Rated voltage	230V AC
	Working current	20mA max
	Power consumption	≤0.5W @230V AC
	Output signal	ON/OFF
	Max surge voltage	2KV(L/N,EN61000-4-5)
	Max surge current	75A (50% I _{peak} , twidth =500us, 230Vac full load, cold start)
	Max loading	Max 2000w resistive loading and 1200w inductive loading @230Vac
Sensor parameter	Function	PIR motion detection+ daylight sensor
	Detection Area	Rotation switch/MH10 remote setting: 100%/75%/50%/25%
	Hold Time	Rotation switch/MH10 remote setting: Test 2s/30s/1min/5min/10min/30min
	Daylight Sensor	Rotation switch/MH10 remote setting: 5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/Disable
	Radius detection range based on 100% detection range	15-18m @25℃ based on 10m mounting height and tangential motion(radial motion trigger distance will be shorter than tangential) 3-5m @25℃ based on 3m mounting height and tangential motion(radial motion trigger distance will be shorter than tangential)
	Daylight Priority	50lux turn on light, 300lux turn off light 100lux turn on light, 400lux turn off light 150lux turn on light, 500lux turn off light 200lux turn on light, 600lux turn off light
	Remote control	available (MH10 remote)
	Mounting heights	3-30m typical value:10m
Application environment	Installation	Surface mounting
	Working temperature	-25℃...+50℃(detection range might differ based on different temperature)
	Storage temperature	-25℃~+50℃, humidity ≤60%(non-condensation status)
	Wiring standard	Wire diameter: 0.2-2.5mm ² Wire stripping length: 5-8mm
	Warranty	5 year (available based on product quality under indoor application)
Certificate Standard	Certificate	CE UACK
	Environmental requirements	Compliant to RoHS
	IP rating	IP54
“N/A” means not available		

【Dimension and Function diagram】



【Wiring instruction】



Wiring layout suggestion:

1. LN terminal stands for AC input, L'N stands for AC output, please wiring correctly
2. One sensor's max loading capacity is 2000w resistive loading and 1200w inductive loading for one single load. if you want connect more load in one loop, we recommend to add an AC contactor in our output LN terminal to avoid momentary surge overload.

【Initialization】

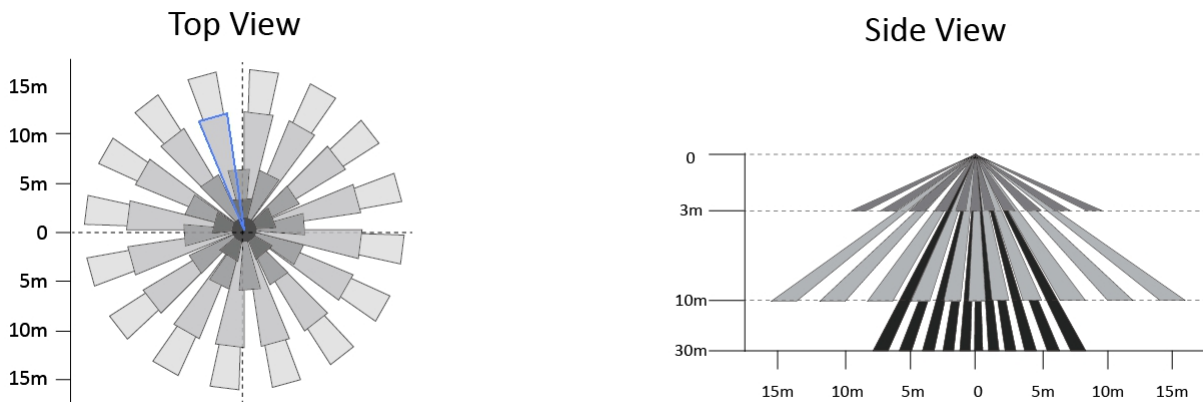
When powered on, sensor indicator will turn off after flashing for 20s and will not detect moving signal during this time. After 20s, you can use our rotation switch or remote to adjust detection area, hold time and daylight sensor etc parameter.

【Factory setting】

Detection Area: 100%, ON/OFF terminal Hold Time: 2s, dry contact terminal Hold Time: 2s, Daylight threshold: Disabled, Indicator: ON

【Detection radiation】

MSA250S IR is highly recommended ceiling surface 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:

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



Major motion



Minor motion



Micro motion

【Rotation switch setting】

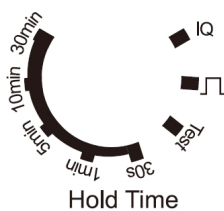
Detection Area

Gear	Detection area
1	25%
2	50%
3	75%
4	100%



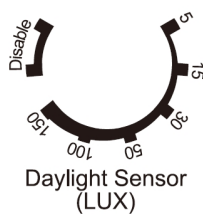
Hold Time

Gear	Hold time
1	Test 2s
2	30s
3	1min
4	5min
5	10min
6	30min



Daylight Sensor

Gear	Daylight threshold
1	5lux
2	15lux
3	30lux
4	50lux
5	100lux
6	150lux
7	Disable



*When disabled set,our sensor will turn on light once motion detected regardless of environment daylight

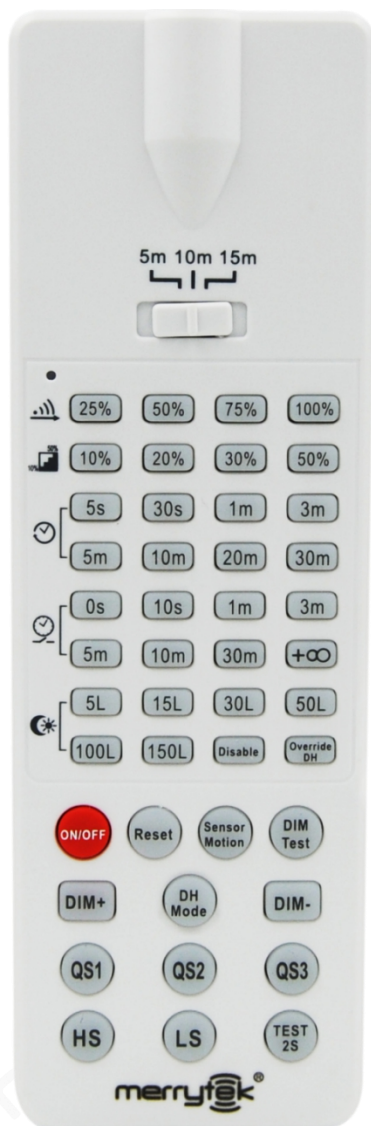
Daylight Priority

Gear	Daylight priority gear
1	50lux ON/300lux OFF
2	100lux ON/400lux OFF
3	150luxON/500lux OFF
4	200lux ON/600lux OFF
5	Disable



【Remote control setting】

MH10 remote:



Detection area:

25%/50%/75%/100%

Daylight priority:

10%: 50lux turn on light/300lux turn off light,
 20%: 100lux turn on light/400lux turn off light,
 30%: 150lux turn on light/500lux turn off light
 50%: 200lux turn on light/600lux turn off light

Hold time:

Test 2s (5S button) /30s/1min/3min/5min/10min/20min/30min

Daylight sensor threshold:

5lux/15lux/30lux/50lux/100lux/150lux/Disable

ON/OFF: disable sense function, light will be constantly on

Sensor motion: enable sense function

Reset: all parameter back as factory setting

DIM test: short press to turn on IQ mode

DIM+: short press to set on/off channel hold time

DIM-: short press to set dry contact channel hold time

【Application tips】

1. Our sensor shall be installed by professional electrician under power-off state
2. Our sensor's typical installation is 10m high 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°C 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.