

Specification

Product series: Low-mounting PIR motion sensor (dry contact version)

Product model: MSA221D IR

Product version: V1.0

Version	Release/ change Date	Publishing
V1.0	2024.02.02	Jacky

【Product description】

MSA221D IR is an compact PIR motion sensor with daylight detection function. Combined with the unique software algorithm of Merrytek, it can accurately detect human movements in almost all indoor spaces to trigger smart scene application in smart homes, smart hotels, and smart offices.

【Product Feature】

- PIR motion detection
- Accurate NO/NC dry contact output
- Daylight sensor detection available
- Detection area,hold time and daylight threshold can be set by remote/DIP switch
- Max detection range: 5-8m in diameter
- Factory setting is NO dry contact,yet can switch to NC by remote
- Hallway and Toilet motion detection highly recommended
- Flush mounting and surface mounting available
- Compacted mini size for perfect ceiling mounting



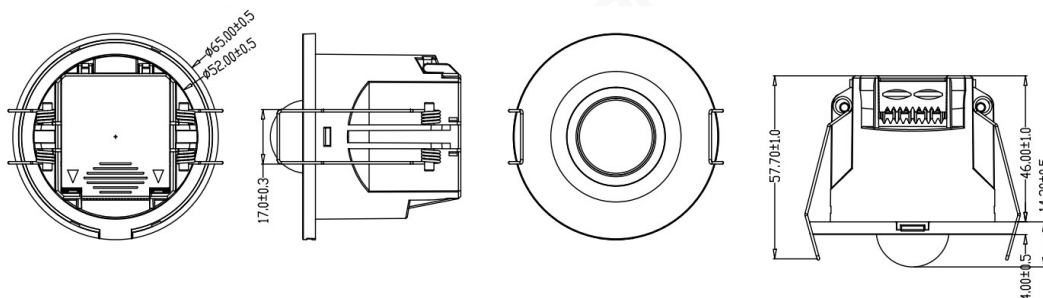
【Dimension】

- Product size: $\phi 52.5 \times 34$ mm
- Connection interface: 4-pin terminal

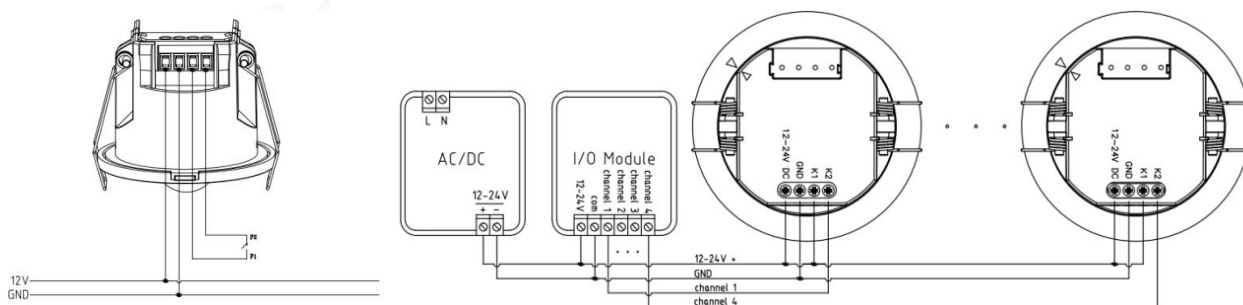
【Parameter】

Input/Output	Input voltage	12-24V DC
	Rated voltage	12/24V DC
	Working current	20mA max
	Power consumption	≤0.5W @12/24V DC
	Output signal	NO/NC dry contact (Factory setting is NO dry contact)
Sensor parameter	Function	PIR motion detection+ daylight sensor
	Detection Area	DIP or remote setting: 100%/75%/50%/25%
	Hold Time	DIP: 5s/1min/3min/5min/10min/30min MH10remote: 5s/30s/1min/3min/5min/10min/20min/30min
	Daylight Sensor	DIP: 50Lux/Disable MH10remote: 5Lux/15Lux/30Lux/50Lux/ 100Lux/150Lux/Disable
	Radius detection range(based on 100% sensitivity)	2.5-4m @25℃ based on 3m mounting height
	Remote control	Available
	Mounting height	2.5-6m typical value:3m
Application environment	Drill hole	Φ55mm
	Working temperature	-25℃...+50℃ (detection range might differ based on different temperature)
	Storage temperature	-40℃~+80℃
Certificate Standard	Certificate	Compliant to CE
	Environmental requirements	Compliant to RoHS
	IP rating	IP20
"N/A" means not available		

【Dimension and Function diagram】



【Wiring instruction】



Wiring layout suggestion:

1. Hand-in-hand wiring is highly recommended, yet star-topology or tree-topology is strongly deprecated
2. When there's more than 1pc sensor is a line, you shall consider all equipment current consumption shall not surpass your driver's loading capacity.

【Initialization】

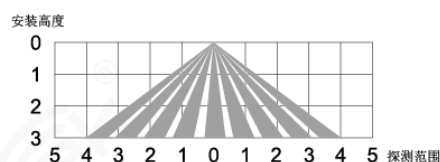
When powered on, sensor indicator will turn off after flashing for 10S and will not detect moving signal during this time. After 10S, you can use our MH10 remote or dip switch to adjust detection area、hold time and daylight sensor etc parameter.

【Factory setting】

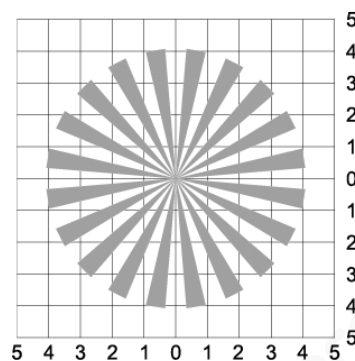
Detection Area:100%, Hold Time: 5s, Daylight Sensor: Disable

【Detection radiation】

MSA221D IR is highly recommended ceiling flush mounting and its detection radiation is as below shows:



Side view



Top view

【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
100%	ON	ON
75%	-	ON
50%	ON	-
25%	-	-

Hold Time

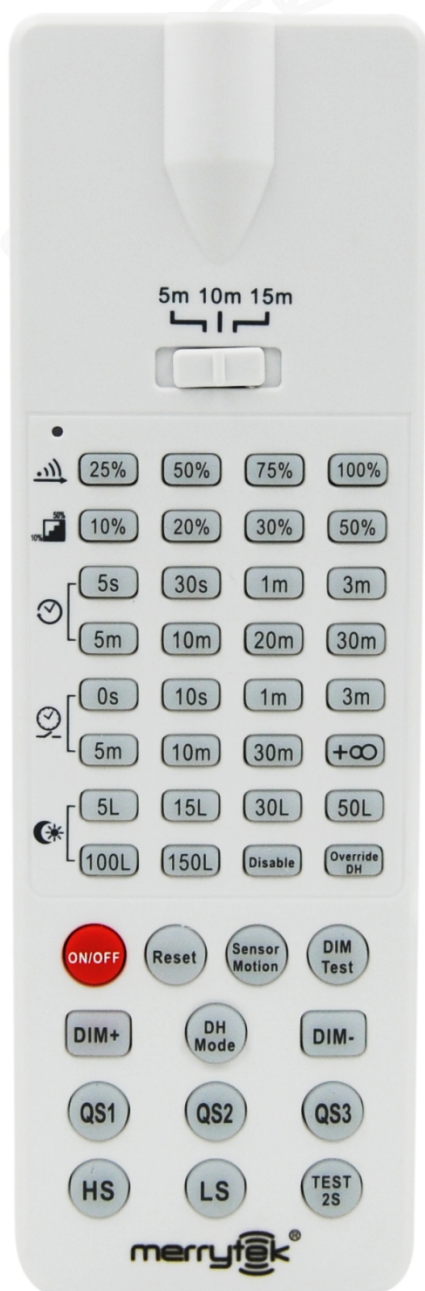
	3	4	5	
I	ON	ON	ON	5s
II	-	ON	ON	1min
III	ON	-	ON	3min
IV	-	-	ON	5min
V	ON	ON	-	10min
VI	-	-	-	30min

Daylight Sensor

	6	
I	ON	50Lux
II	-	Disable

*Once daylight sensor set as Disable,our motion sensor will detect human movement regardless of environment lux

【Remote manual】



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

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

Daylight threshold: 5lux/15lux/30lux/50lux/100lux/150lux/Disable

ON/OFF: disable sense function

Sensor motion: enable sense function

Reset: all parameter back as factory setting

DIM+: NO dry contact

DIM-: NC dry contact

HS: turn on indicator

LS: turn off indicator

【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.