

# Specification

**Product Name:** DC Controller (PIR)

**Product Model:** MC182D IR (0-10V) ; MC182D IR 1 (PWM)

Versions	Release/ change Date	Reason	Publishing
V1.0	2024.10.31		James.Guo

## 【Product Feature】

- International standard Zhaga Book20 (R44 X17; R60 X22) interface
- 4 meters maximum installation height, suitable for  
Open offices, Individual Offices
- PIR motion detector for Panel Light, Linear Light.
- Sensor parameters can be adjusted by remote
- Low mounting PIR sensor



## 【Parameters】

Input			
Rated voltage	12±1VDC		
Operating current	6±2mA		
Ripple voltage	<100mVp-p		
output			
Output signal	0 -10VDC/PWM dimming signal		
Sensor parameters			
Detection mode	PIR detection		
Hold Time	30s/1min/3min/5min/10min/20min/30min（MH17）		
Stand-by Period	0s/10s/1min/3min/5min/10min/30min/+∞（MH17）		
Daylight Sensor	Daylight threshold	5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/999Lux(Disable)(MH17) （Ambient light diffusing state）	
	Daylight harvesting	100L/200L/300L/400L/500L/600L/Disable	
	Daylight Priority	ON	OFF
		5Lux	55-105Lux
		15Lux	65-115Lux
		30Lux	80-130Lux
		50Lux	100-150Lux
		100Lux	150-250Lux
	150Lux	200-300Lux	
Dimming level	10%(1.4-1.6V) 20%(1.9-2.1V) 30%(2.9-3.1V) 50% (4.9-5.1V)		
Detection range (radius)	2.5m (indoor, sensitivity 100%,no direct sunlight to sensor; temperature:25℃ )		
Installation height	Typical 3m (4m Max ), see note 1 & 2		
Environment			
Working temperature(Ta)	-20℃-55℃		
Storage temperature	-40℃~+80℃ Humidity: ≤85% (non-condensing)		
Certification standards			
Certified	CE		
Environmental requirements	Comply with RoHS 2.0 , Reach requirements		
IP Rating	IP20		
Other			
Wiring	3 pin PH2.0 terminal		
Installation requirements	Zhaga book20 size hole		

Packaging requirements	Clapboard + Carton(K=A)
Net weight	10±3g
Lifetime	3 years warranty @Ta (indoor)

**Note:**

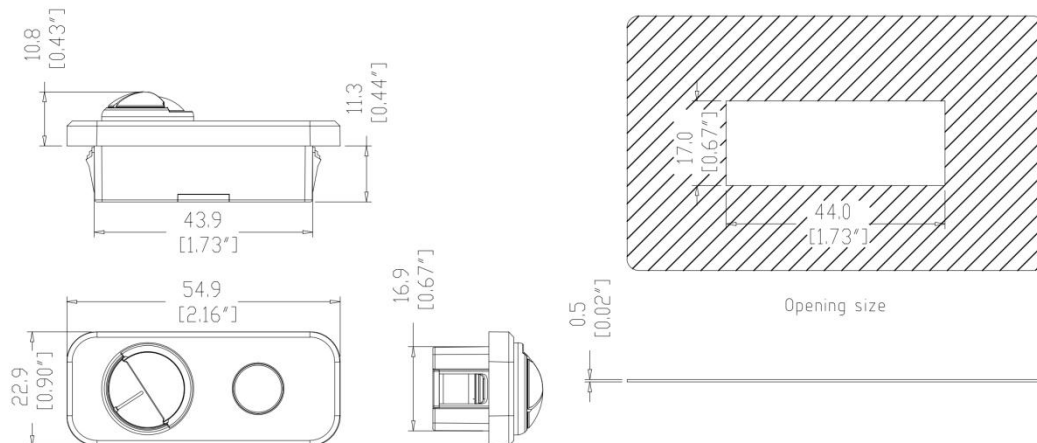
1. When ambient temperature approaches the human body temperature range (36°C~37°C/96.8~98.6°F), PIR motion detection will significantly weaken or non-responsive.
2. When ambient temperature or LED tray temperature is higher than 55°C/131°F, false triggering may happen, please try to reduce detecting sensitivity to improve. If stays false triggering, the PIR sensor should not suitable to be used in the space.

## 【Function description】

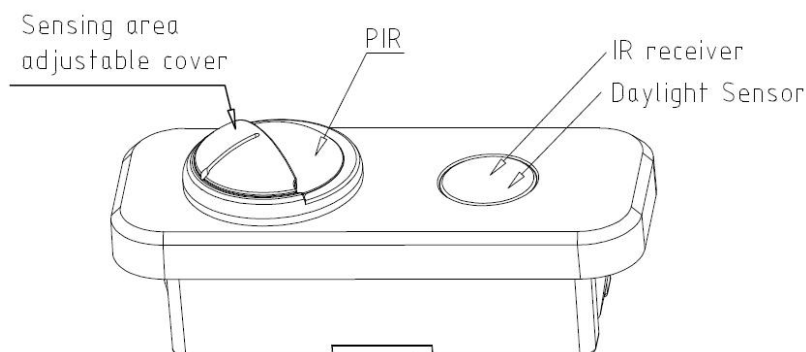
- ☒ON-OFF function      Stand-by Period be set to “0s”
- ☒2-step dimming      Stand-by Period be set to “+∞”
- ☒3-step dimming      Stand-by Period be set to “10s/1min/3min/5min/10min/30min”
- ☐Daylight priority      N/A
- ☒Daylight harvesting      Remote set DH Mode+Daylight Sensor  
“5Lux=100Lux/15Lux=200Lux/30Lux=300Lux/50Lux=400Lux/100Lux=500Lux/150Lux=600Lux”

## 【Product Information】

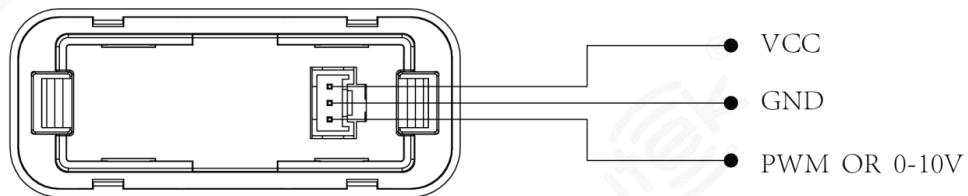
### ● Dimension (Unit: mm)



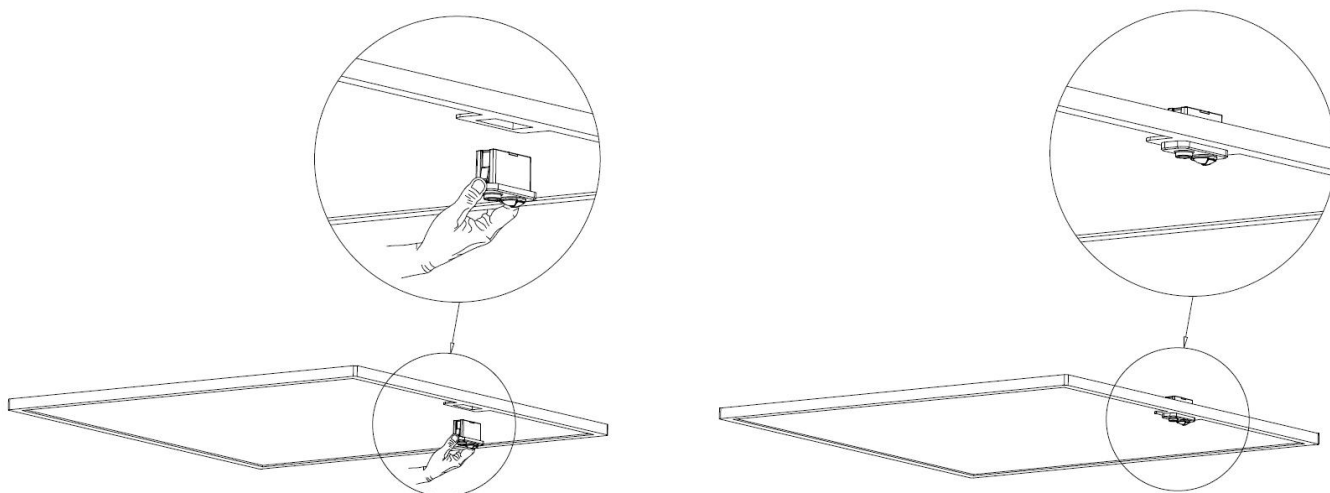
### ● Function



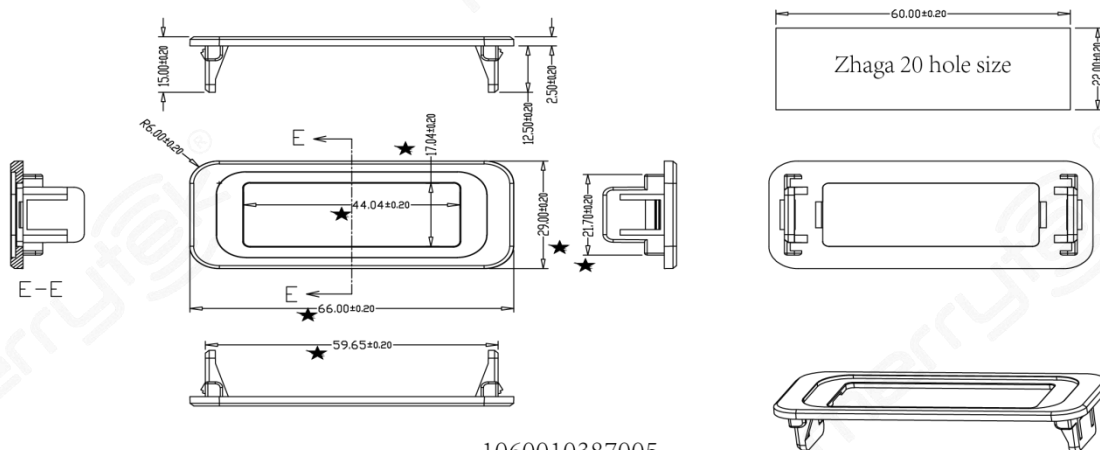
## ● Wiring



## ● Installation Instruction



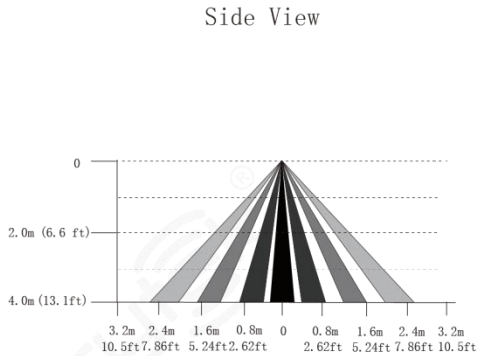
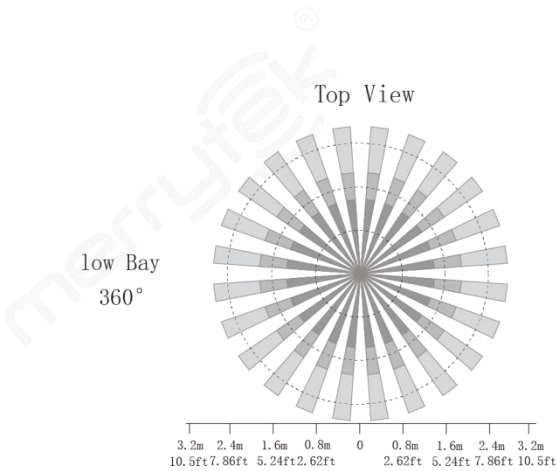
## Accessories



1060010387005

zhaga book 20 category R60 x 22 convert to category R44 x17 accessory

【Detection Range】

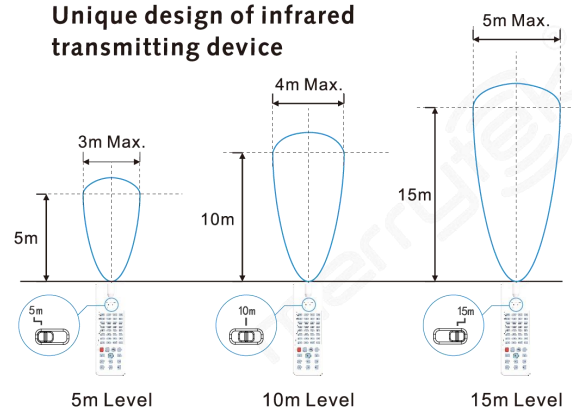


Remote Control Setting	Button	Remarks																								
		Press the "ON/OFF" button, the light enters the constant ON/OFF mode, and the sensing function is disabled. In ON/OFF mode, DIM+/DIM- function is available, it maintains the same brightness after powering on again. Power off under NO mode and then power on, the lamp enters constant OFF mode. Power off under constant ON mode and then power on, the load lamp lights 2s and then enters NC mode.																								
		Press "Reset" button, all parameters are same as setting of DIP switch or factory settings.																								
		Press "Sensor motion" button, the light quits from the constant on/ off mode, and the sensor starts to work ( The latest setting stays in validity )																								
		Press "DIM Test" button, the 1-10 V dimming works to test whether the 10Vdc dimming ports are connected properly. After 2s, it returns to the latest setting automatically.																								
		Short press to transmit a dimming signal, and the brightness of the lamp will be adjusted with +/-2% each time; dimming range: 50%-100 %. Long press continuous dimming (Only available for daylight priority function sensor) Note: the maximum brightness can be set with this button;																								
		Long press "DH Mode" >3s to enter the daylight priority function or the daylight harvesting function; Press "Override DH" quit daylight priority function or "Reset" return to factory default																								
		<table border="1"><thead><tr><th>Scene Options</th><th>Detection Area</th><th>Hold Time</th><th>Stand-by period</th><th>Stand-by dim level</th><th>Daylight Sensor</th></tr></thead><tbody><tr><td>QS1</td><td>100%</td><td>5min</td><td>10min</td><td>10%</td><td>30Lux</td></tr><tr><td>QS2</td><td>100%</td><td>10min</td><td>30min</td><td>10%</td><td>Disable</td></tr><tr><td>QS3</td><td>100%</td><td>20min</td><td>30min</td><td>10%</td><td>Disable</td></tr></tbody></table> Note: Users can press any button to adjust parameters, subject to the last setting. When the sensor does not have the above parameter function, the parameter setting is invalid. Hold time, dim level are not applicable to ON/OFF sensor, Sensor mode is not available for low installation sensor.	Scene Options	Detection Area	Hold Time	Stand-by period	Stand-by dim level	Daylight Sensor	QS1	100%	5min	10min	10%	30Lux	QS2	100%	10min	30min	10%	Disable	QS3	100%	20min	30min	10%	Disable
	Scene Options	Detection Area	Hold Time	Stand-by period	Stand-by dim level	Daylight Sensor																				
	QS1	100%	5min	10min	10%	30Lux																				
	QS2	100%	10min	30min	10%	Disable																				
	QS3	100%	20min	30min	10%	Disable																				
		Press the "RESET" and then Press the "TEST 2S" button can enter the test mode any time. At the mode the sensor parameters as below: Detection Area is 100%, Hold Time is 2s. Stand-by Dim setup Level, Stand-by Period is 0s, This function only for testing. Quit the mode by pressing "RESET" or any other function buttons.																								
		N/A																								
		Daylight Sensor Set up daylight threshold for daylight priority: 5LUX/15LUX /30LUX/50LUX/100LUX/150LUX/Disable																								
		Stand-by period Set up stand-by time: 0S/10S/1min/3min/5min/10min/20min/30min/+∞																								
		Hold time Set up hold time: 5S/30S/1min/3min/5min/10min/20min/30min																								
		Stand-by dim level Set up stand-by dim level: 10%/20%/30%/50%																								
		Detection Area Set up detection area: 25%/50%/75%/100%																								
	Remote Distance Toggle bottom can set the remote distance of remote control and sensor.																									

## Remote control and code setting conversion

- DIP switch setting convert to remote control Press any bottom except "RESET" on the remote control, and the sensor settings convert to the function currently selected by the remote control. (No function button settings invalid)
- remote control convert to DIP switch setting
  - Press the "RESET" button on the remote control, and all settings return to the DIP switch settings of the sensor.
  - Turn off the power, toggle any DIP switch, connect to the power, and all settings return to the DIP switch settings when supply power again.

## Unique design of infrared transmitting device



## 【Initialization】

After switch on power, sensor will be warmed 45-60s then start to work.

## 【Default setting】

Sensitivity: 100%, Hold time: 5s, Daylight sensor: Disable, Stand by period: 0s, Stand by DIM Level: 10%

## 【Application Notice】

- The sensor should be installed by a professional electrician. Please turn off the power before installing, wiring and changing parameters.
- PIR sensor can't penetrate any materials, please make sure no obstacle between sensor and moving people/object.
- Sensor may hard to detect people if wear thick clothes in cold winter.
- Heat signals will be regarded as moving signals to trigger the sensor. Avoid facing sensor to air condition or other heating source.
- Sensor is for indoor use only. Outdoor sunlight could affect the detection of sensor.
- Due to continuous improvement, the contents of this instruction could be changed without prior notice.
- The dimming performance could be different when work with different 0-10V drivers.
- The daylight threshold is measured in a sunny environment without shadow and ambient light diffuse reflection. Ambient lux level could be different in different environment, weather, climate, time-of-day and season.
- Detection distance is related to height of people, mounting height, mounting angle, working environment temperature and etc. When ambient temperature approaches the human body temperature range ( $36^{\circ}\text{C}\sim 37^{\circ}\text{C}/96.8\sim 98.6^{\circ}\text{F}$ ), PIR motion detection will significantly weaken or non-responsive. When ambient temperature or LED tray temperature is higher than  $55^{\circ}\text{C}/131^{\circ}\text{F}$ , false triggering may happen, please try to reduce detecting sensitivity to improve. If stays false triggering, the PIR sensor should not suitable to be used in the space.
- Given detecting area is typical value that was measured by 165cm high testers in an indoor open environment.
- This product have to use with voltage-stabilized DC power supply whose input voltage is stable and ripple factor is low(ripple factor is lower than 100mV; load current is greater than 25mA).
- When installing in new environment, please install and test at least 5pcs product firstly before mass installation.
- PIR is a pyroelectric infrared sensor that detects changes in infrared rays. Pls pay attention to the following matters during actual use, such as: detecting heat sources other than the human body, the temperature of the heat source does not change or the heat source does not move, and other related environmental factors and violations of the PIR application principle impact.
- When detecting heat sources other than the human body due to the following phenomena, the PIR may be falsely triggered.
  1. When small animals enter the detection range
  2. When far-infrared rays from sunlight, car headlights, incandescent lamps, etc. are directly exposed

to the sensor

3. When the temperature in the detection range changes drastically due to warm air, cold air from cold greenhouse equipment, water vapor from humidifiers, etc.

- When detecting heat sources due to the following phenomena, the PIR may not trigger
  1. When there are substances such as glass and acrylic that block the transmission of far-infrared rays between the sensor and the detection object.
  2. The heat source within the detection range hardly moves or moves at high speed.