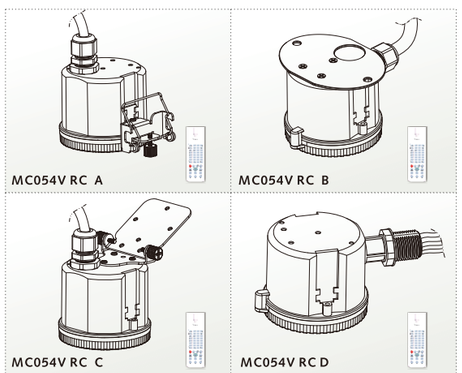
MC054V RC

Lighting Control Switch USER'S MANUAL

Model No.: MC054V RC A/B/C/D



EN

Instruction

MI190715A4

FEATURE

- Sensor parameters can be conveniently set by a remote control.
- Mounting height up to 49.2ft(15m) max. , suitable for warehouse use.
- Water proof sensor with IP65 rating.
- Automatic dimming when used in combination with 1-10V dimmable control gears.
- Built-in adjustable daylight sensor.
- 1-10V interface can match up with Merrytek stand-alone daylight sensor MS01 and achieve daylight harvesting.
- Optional mounting brackets for different application.

SPECIFICATIONS

Input voltage	120~277Vac, 50/60Hz(AUS/EURO) 120/277Vac,50/60Hz(USA)
Rated load (EURO/AUS)	400W@120-220Vac; 800W@220-277Vac (Inductive) 800W@120-220Vac; 1000W@220-277Vac (Resistive)
Rated load (USA)	120Vac 50/60Hz 4A electronic/magnetic ballast 277Vac 50/60Hz 3A electronic/magnetic ballast
Detection area	26.2 ft (8m)Max.(radius) adjustable
Hold time	5s/ 30s/ 1min/ 3min/ 5min/ 10min/ 20min/ 30min
Daylight sensor	5lux/ 15lux/ 30lux/ 50lux/ 100lux/ 150lux/ Disable
Stand-by period	0s/ 10s/ 1min/ 3min/ 5min/ 10min/ 30min/ +∞
Stand-by dimming level	10% / 20% / 30% / 50%
Sensor principle	Microwave motion detector
Microwave frequency	5.8GHz±75MHz, ISM wave band
Mounting height	9.8-49.2 ft(3-15m)
Detection angle	150°(Wall installation), 360°(Ceiling installation)
Motion detection	1.6~3.3 ft/s(0.5~1 m/s)
Operating temperature	-35°C~55°C
IP rating	IP65(INDOOR ONLY USE)
Surge current of load	50A (50% Ipeak, twidth =500uS, 277Vac full load, cold start); 80A (50% Ipeak, twidth =200uS, 277Vac, full load, cold start)

GENERAL GUIDELINES FOR INSTALLATION

1, The sensor should be installed by a qualified electrician. And ensure that the electricity supply is switched off before installing or servicing the product.
2, Installation inside a glass or plastic housing will result in a reduction of detection sensitivity. Expect a reduction of approximately 20% for every 3mm of thickness.
3, Detection area will be affected by speed of motion, height of installation and volume of moving object.
4, Daylight sensor was tested on sunny environment with no lampshade. ambient lux level could be different under different weather, climate, season or environment.
5,CAUTION-Rish of Electric shock-More that one disconnect swith may be required to de-energize the equipment before servicing

Application Notice

1, Sensors settings may need to be adjusted to match installation site, please follow below instructions or contact manufacturer.
2,The sensor is designed for indoor use only. Outdoor use for a long time may reduce the waterproof effects. The raining or wind blowing may trigger the microwave sensor even if without human motion when outdoor use.
3, The distance between any two sensors should be at least 3m to avoid interference with each other.
4, When the microwave sensor is installed in a metal lighting fixture or space with large reflector, for example a warehouse with metal roof, the microwave will be reflected and cause the lights permanently illuminated even if without motion signal. Please reduce the detection area (sensitivity) to solve the problems, or contact the microwave sensor manufacturer to provide technical support.
5, Make sure the sensor not close to or be blocked by high density material, such as metal, glass, concrete walls etc. The materials will reduce or block microwave and cause false trigger.
6, Make sure there are no fans or other vibrating objects in installation area. The movements will trigger sensor as well.

INITIALIZATION

1, ON/OFF function or 3-step dimming function:
After power on, the sensor automatically turns on light at 100% brightness.
After 10sec, it completely turns off light.
During the initialization, the sensor is not able to detect movement.
2, 2-step dimming function:
After power on, the sensor automatically turns on light at 100% brightness.
After 10sec, it dims the light to a low light level (set by stand-by dim level).
During the initialization, the sensor is not able to detect movement.

FCC Caution:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) this device must accept any interference received, including interference that may cause undesired operation.

IC RSS warning:

This device complies with Industry Canada licence-exempt RSS standard (s). Operation is subject to the following two conditions:

(1) this device may not cause interference

(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent areil est conforme aux CNR d'Industrie Canada licables aux areils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

(1) l'areil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

SETTINGS (DIP SWITCH)

Detection area, hold time, stand-by period, stand-by DIM level and daylight sensor can be set by using DIP switches on the sensor. Note that reducing the detection area will also reduce the sensitivity.

Detection area

I: up to 100%
II: up to 50%

ON		1	
	I	ON	100%
	II	–	50%

Hold time

Refers to the time period the lamp remains at 100% illumination after no motion detected.
I: 5s
II: 30s
III: 1min
IV: 3min
V: 20min
VI: 30min

ON		2	3	4	
	I	ON	ON	ON	5S
	II	–	ON	ON	30S
	III	ON	–	ON	1min
	IV	–	–	ON	3min
	V	ON	ON	–	20min
	VI	–	–	–	30min

Stand-by period

Refers to the time period the lamp remains at a pre-setting dimming level before it completely switches off in the long absence of people.
I: 0s
II: 1min
III: 3min
IV: 10min
V: 30min
VI: +∞

ON		1	2	3	
	I	ON	ON	ON	0S
	II	–	ON	ON	1min
	III	ON	–	ON	3min
	IV	–	–	ON	10min
	V	ON	ON	–	30min
	VI	–	–	–	+∞

*When set to 0s, the lamp will work as on/off function
*When set daylight sensor to "Disable" and stand-by period to "+∞" , the lamp will work as 2-step dimming control (Motion detected, 100% lumens, no motion, remains at pre-setting level lumens)

Stand-by dimming level

This is the pre-setting dimming level you would like to have after the hold time in the long absence of people.
I: 10%
II: 20%
III: 30%
IV: 50%

ON		4	5	
	I	ON	ON	10%
	II	ON	–	20%
	III	–	ON	30%
	IV	–	–	50%

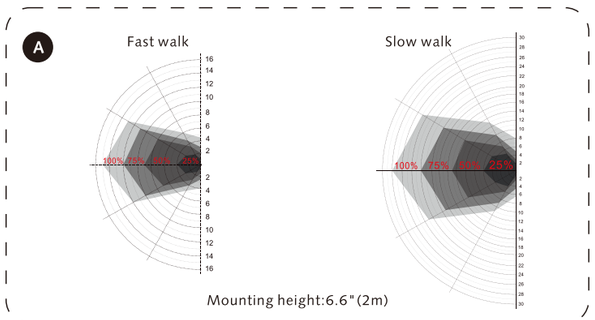
Daylight sensor

The sensor can be set to only allow the lamp to illuminate below a defined ambient brightness threshold. The settings are as follows:
I: 5lux, darkness operation only
II: 15lux, darkness operation only
III: 30lux, twilight operation
IV: 50lux, twilight operation
V: 100lux, twilight operation
VI: 150lux,twilight operation
VII: Disable*

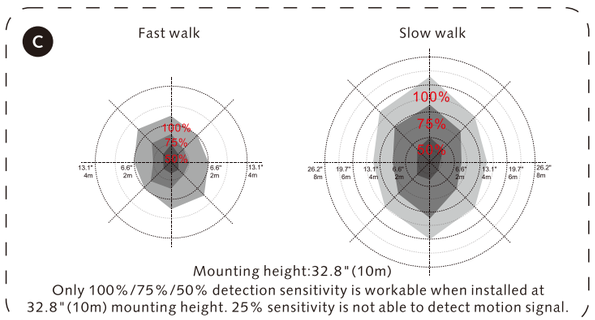
ON		6	7	8	9	
	I	ON	ON	ON	ON	5Lux
	II	–	ON	ON	ON	15Lux
	III	ON	–	ON	ON	30Lux
	IV	–	–	ON	ON	50Lux
	V	ON	ON	–	ON	100Lux
	VI	ON	ON	ON	–	150Lux
	VII	–	–	–	–	Disable

*When set to Disable Mode, the sensor will switch on the lamp when motion is detected regardless of ambient light levels.

DETECTION PATTERN(FOR WALL MOUTING)

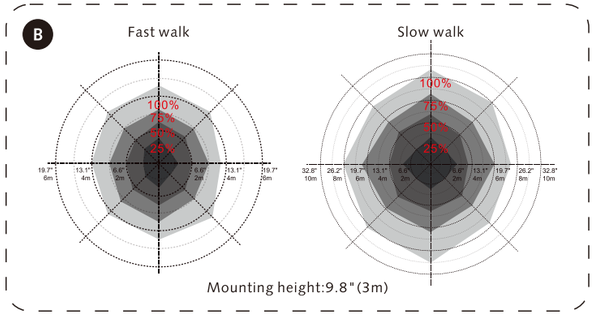


Mounting height:6.6"(2m)

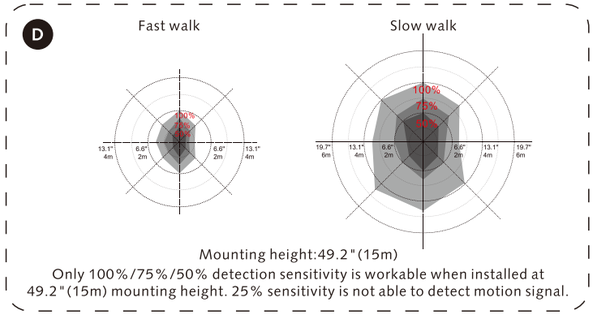


Mounting height:32.8"(10m)
Only 100%/75%/50% detection sensitivity is workable when installed at 32.8"(10m) mounting height. 25% sensitivity is not able to detect motion signal.

DETECTION PATTERN(FOR CEILING MOUNTING)



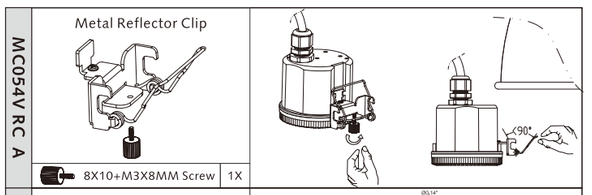
Mounting height:9.8"(3m)



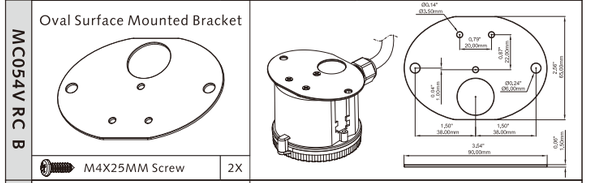
Mounting height:49.2"(15m)
Only 100%/75%/50% detection sensitivity is workable when installed at 49.2"(15m) mounting height. 25% sensitivity is not able to detect motion signal.

INSTALLATION

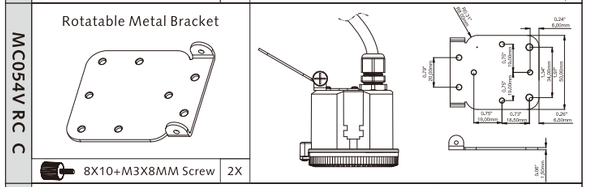
MC054V RC A



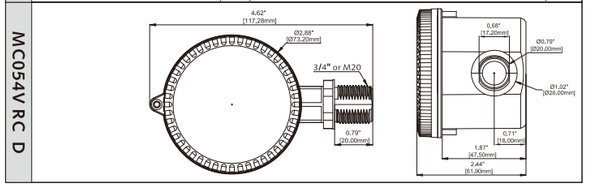
MC054V RC B



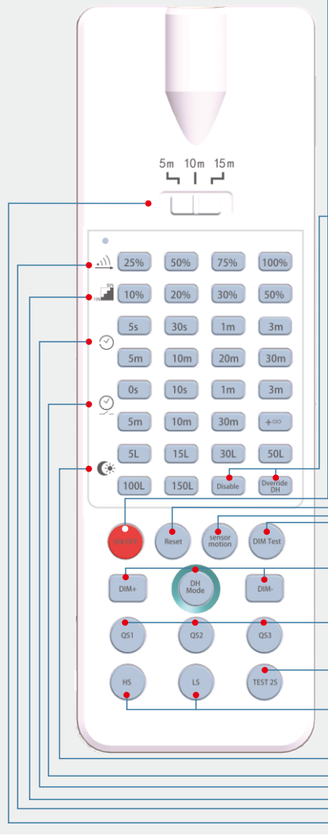
MC054V RC C



MC054V RC D



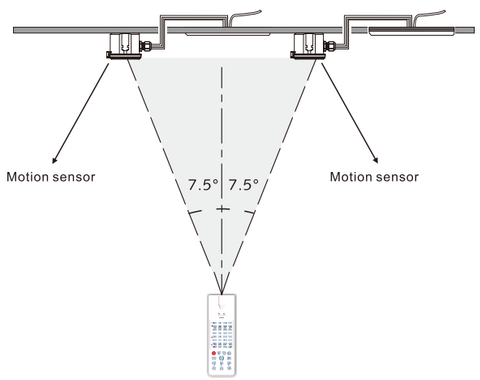
Remote Control Setting



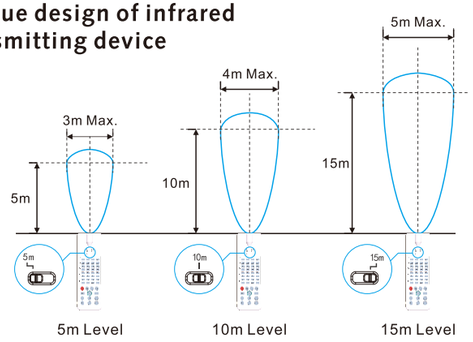
Button	Remarks
ON/OFF	Press the “ON/OFF” button, the light goes to constant on/off mode, sensor is disabled. Press “Reset” “Sensor motion” button to quit from this mode and the sensor starts to work.
Reset	Press “Reset” button, all parameters are same as setting of factory settings.
Sensor motion	Press “Sensor motion” button, the light quits from the constant on/ off mode, and the sensor starts to work (The latest setting stays in validity)
DIM Test	Press“DIM Test” button, the 1-10 V dimming works to test whether the 1-10Vdc dimming ports are connected properly. After 2s, it returns to the latest setting automatically.
Override DH / Disable / DIM+ / DIM- / DH Mode	"Override DH”, “DIM+ DIM-”,and "DH Mode" that the three functions are not applicable for MC054V RC
Q1 Q2 Q3	Scene Options: QS1 — Detection Area 100%, Hold Time 5min, Stand-by period 10min, Stand-by dim level 10%, Daylight Sensor 30Lux, Sensitivity model N/A QS2 — 100%, 10min, 30min, 10%, Disable, N/A QS3 — N/A, N/A, N/A, N/A, N/A, N/A Note: Detection area / Hold time /Stand-by period /Stand-by dim level / Daylight sensor can be adjusted by pressing the corresponding button. The latest setting will stay valid.
TEST 2S	Press the "TEST 2S" botton can enter the test mode any time. At the mode, the sensor parameters as below: Detection Area is 100%, Hold Time is 5s, Stand-by Dim Level is 10%, Stand-by Period is 0s, daylight sensor disable. This function only for testing. Quit the mode by pressing "RESET" or any other function buttons.
HS LS	N/A
	Daylight Sensor Set up daylight threshold: 5Lux/15Lux/30Lux/50Lux/100Lux/150Lux/ Disable。
	Stand-by period Set up stand-by time: 0S/10S/1min/3min/5min/10min/30min/+∞
	Hold time Set up hold time: 5S/30S/1min/3min/5min/10min/20min/30min
50% 10%	Stand-by dim level Set up stand-by dim level: 10%/20%/30%/50%
	Detection Area Set up detection area: 25%/50%/75%/100%
5m 10m 15m	Remote Distance Toggle button can set the remote distance of remote control and sensor.

As the control angle of the Infrared Remote Control is fixed (15°), if sensors are installed too close to each other, settings of both sensors will be configured. Please refer to the below chart for the distance of the installation of the sensor:

Mounting height	Distance between sensors
15m	5m
12m	4m
9m	4m
6m	3.5m



Unique design of infrared transmitting device



Remote control and code setting conversion

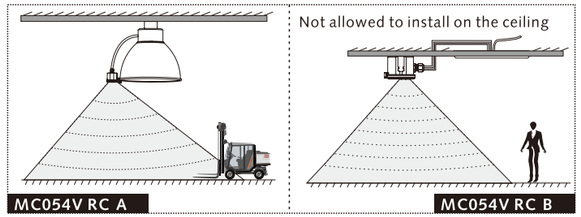
1.DIP switch setting convert to remote control Press any botton except “RESET” on the remote control, and the sensor settings convert to the function currently selected by the remote control. (No function button settings invalid)

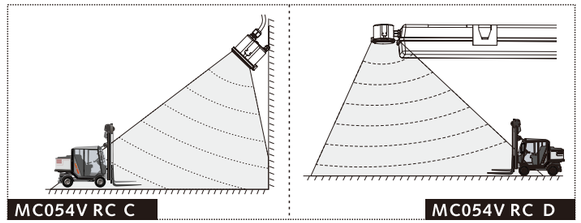
2 remote control convert to DIP switch setting

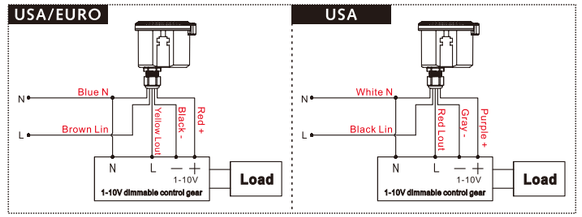
a. Press the "RESET" button on the remote control, and all settings return to the DIP switch settings of the sensor.

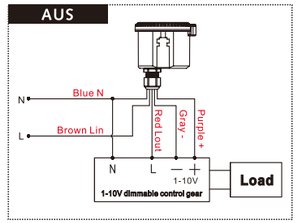
b. Turn off the power, toggle any DIP switch, connect to the power, and all settings return to the DIP switch settings when supply power again.

WIRING









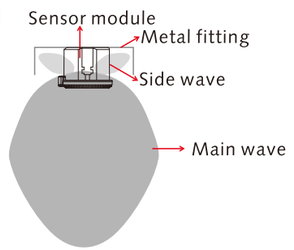
NOTE:
Lord bushing of the torque is 2.5NM,
Torgue of nut is 2.5NM.
The sensor is designed for connect one load only. Connect more than one loads may damage the sensor.

FAQ

Question	Cause	Remedy
The load will not illuminate.	Incorrect daylight sensor setting selected.	Adjust setting.
	Load has failed.	Replace load.
	Power is switched off.	Switch on.
The load is permanently illuminated. (SEE NOTE1)	Continuous movement in the detection area.	Check detection area setting.
	The lamp (containing sensor) is installed in an area too close to reflective surfaces, i.e. metal, glass or concrete walls.	1, Make sure installation area suitable with at least 39.4inches(100cm) space between lamp and surrounding reflective surfaces. 2, Reduce sensitivity (detection area).
The load will not illuminate despite movement.	Speed of moving object is not in the range of 1.6~3.3ft/s(0.5~1m/s) or the detection radius is too small.	Check detection area setting.
The remote control is not working.	The battery on the remote control is run out.	Change the battery.
	The remote control is not aligned with sensor.	Change the remote angle.

Note:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following .
Measures:
-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

NOTE1



Microwave detection includes two parts called main wave and side wave. Main wave normally detects the motion signal. Side wave does not effect motion detection but might disturb main wave if the microwave motion sensor is built-in a sealed metal luminaire as microwave can not pass through metal.

When the microwave module is built into a metal lighting luminaire or installed in a sensor near a wall, the side wave will be reflected by the metal base or the wall. It can disturb the main wave. As the result of this, the microwave motion senor might not perform optimally. Reducing the detection sensitivity or the side wave will help to solve such problems.

Shenzhen Merrytek Technology Co., Ltd
Phone:+86(755)2305 7253/59 • Fax:+86(755)2786 3012 • sales@merrytek.com • www.merrytek.com
2nd and 3rd Floor, No.3 Building, 380 Xiangshan Avenue, Luotian, Yanluo, Baoan, Shenzhen, 518127, China