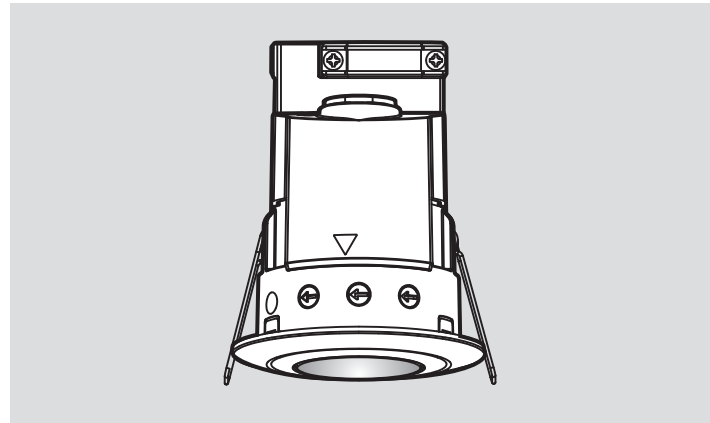


mySmart PRESENCE DETECTOR for Lighting and HVAC automation control MY-P109-RR / MY-P109-S



INSTRUCTION MANUAL

TECHNICAL SPECIFICATIONS

Rated voltage 220 - 240V~ 50 / 60Hz

Load

- MY-P109-RR Load I (CH1) For Lighting: μ
 - Incandescent Lamp : Max. 2000W
 - AC Halogen Lamp : Max. 1000W
 - LV Halogen Lamp : Max. 1000VA / 600W (traditional)
 - Max. 1000VA / 900W (electronics)
 - Fluorescent Lamp : Max. 1000VA / 600W (uncompensated)
 - Max. 900VA / 100 μ F
 - 25 x (1 x 18W); 12 x (2 x 18W); 15 x (1 x 36W); 7 x (2 x 36W); 10 x (1 x 58W); 5 x (2 x 58W)
 - LED Lamp : Max. 400W
 - Energy Saving Lamp: Max. 600VA / 400W (include CFL and PL lamp)
- MY-P109-RR Load II (CH2) For HVAC (Lux is invalid):
 - Max. 5A ($\cos \phi = 1$) for $\leq 250VAC$
 - Max. 5A for $\leq 30VDC$
 - Max. 1A ($\cos \phi = 0.4$) for $\leq 250VAC$
- MY-P109-S (For optional purchase) Slave detector used to detect and transfer detecting signals to master detector. MY-P109-RR while a larger detection range is controlled, max. 10pcs slave detectors can be connected.

2 PRODUCT DESCRIPTION

MY-P109-RR is a ceiling flush mount Passive Infrared motion detector. The load is switched on automatically when movement is detected and the ambient light level is below the Lux setting value. When no movement is detected and the pre-set delay time has expired, load will be switched off automatically. The desired Lux and time values can be preset manually or via the optional IR remote control MY-R11.

2.1 Features

- Integrated sensor and power box in one unit using the spring clamps for easy and quick installation.
 - Two relays for controlling lighting and HVAC device respectively.
 - Built-in walk test function to ensure the desired detection field is entirely covered and a red LED for testing trigger indication.
- Auto Off Timer Adjustment
- MY-P109-RR Time 1 (for lighting): Adjustable from approx. 5sec to 30min, Test & $\sqrt{1s}$
 - Time 2 (for HVAC): Adjustable from approx. 10sec to 60min
- Lux Adjustment
- Adjustable from approx. 10Lux to ∞ and ∞ (learning range: 10Lux - 2000Lux)

TECHNICAL SPECIFICATIONS

Meter Adjustment	Adjustable from “-” (approx. $\Phi 2m$) to “+” (approx. $\Phi 9m$)
Detection Range	360° circular, up to $\Phi 9m$ at height of 2.5m
Operating Temperature	-20°C to +50°C
Environmental Protection	IP44

Installation and assembly of electrical equipment must be carried out by qualified electricians. Contact a qualified electrician in the event of fault or break down.

CAUTION!

- A circuit breaker (250VAC, 10A) type C according to EN60898-1 of load I shall be installed in the fixed wiring for protection.
- A circuit breaker (250VAC, 6A) type C according to EN60898-1 of load II (CH2) shall be installed in the fixed wiring for protection.
- Do not mount on conductive surfaces.
- Do not open the enclosure frequently.
- Turn off power when changing light sources.
- High in-rush current could occur when bulbs of certain types are used which may damage the unit permanently.

1 PACKAGE CONTENTS

Pattern				
Item	Detector	Lens Shield	Manual	IR remote control MY-R11 (For optional purchase)
Quantity	1	2	1	1

2 PRODUCT DESCRIPTION

MY-P109-RR is a ceiling flush mount Passive Infrared motion detector. The load is switched on automatically when movement is detected and the ambient light level is below the Lux setting value. When no movement is detected and the pre-set delay time has expired, load will be switched off automatically. The desired Lux and time values can be preset manually or via the optional IR remote control MY-R11.

2.1 Features

- Integrated sensor and power box in one unit using the spring clamps for easy and quick installation.
- Two relays for controlling lighting and HVAC device respectively.
- Built-in walk test function to ensure the desired detection field is entirely covered and a red LED for testing trigger indication.

- Ambient light level can be learnt for switching on / off the loads for a more flexible application.
- Lens shield for minimising or blocking detection field.
- Optional IR remote control MY-R11 is available for easy and quick programming.
- Additional function for manually switching on / off the controlled load is available by connecting a push button switch.

2.2 Dimension

- MY-P109-RR / MY-P109-S: $\Phi 75 \times 96mm$ (See FIG.1)

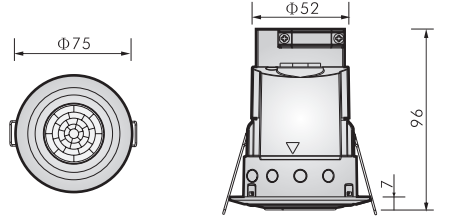


FIG.1

3 INSTALLATION AND WIRING

Please disconnect power completely and read the entire instruction manual carefully before installation.

3.1 Select a proper location

- 3.1.1 Sensor installation height is 2 to 5 metres. For optimal detection install at 2.5m height, which provides a 9m detection range and 360° detection angle (see FIG.2).

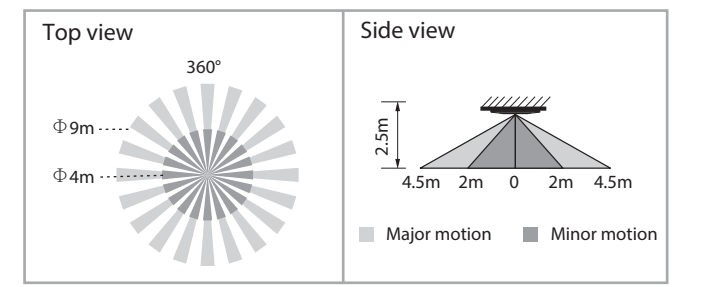


FIG.2

- 3.1.2 Note walking direction during testing. Sensor is more sensitive to movement across the detector and less sensitive to movement directly towards the detector which reduces the detection coverage (see FIG.3).

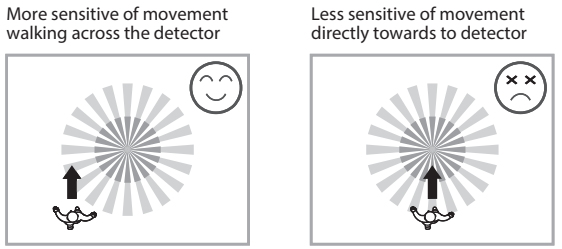


FIG.3

3.1.3 Helpful tips for installation

- Since the detector responds to temperature changes, avoid the following conditions (see FIG.4-A & FIG.4-B):
- Avoid aiming the detector towards objects which may be effected by air movement such as curtains, tall plants etc.
 - Avoid aiming the detector towards objects with high reflective surfaces such as mirrors, monitors etc.
 - Avoid mounting the detector near heat sources, such as heating vents, air conditioning etc.

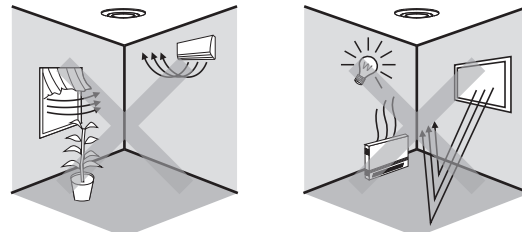


FIG.4-A

FIG.4-B

3.2 Function

3.2.1 Manual ON / OFF switching function

- 3.2.1.1 An additional push button can be connected between terminal R/S and L for manual on / off operation. Case 1: on \rightarrow off; Case 2: off \rightarrow on, while pressing push button ($\leq 1sec$). Note, this function is invalid when the lighting (detector) is in the On 8hrs and Off 8hrs condition set by the IR remote control MY-R11.

Case 1: Manual off switching (Lux setting is invalid): Under the light on status, the light can be manually switched off by short pressing ($\leq 1sec$) the push button. Whilst in this operational mode, if the detector is triggered by movement, the lights stay off for the duration of the set switch off delay time. When there is no movement detected and the pre-set switch off delay time is reached, the detector resumes operations according to the previous operational mode set by knobs or IR. If the push button is pressed for ($\leq 1sec$) during the light manual off period, the manual light on function will be activated (see Case 2).

- 3.2.3 Semi-auto mode (operation with MY-R11 only)
 - Detector enters into semi-auto mode by pressing “AM” button on MY-R11.
 - Under semi-auto mode, load can only be manually switched on by operating external push button.
 - When the load is switched on, it will remain on whilst there is movement detected. Load will turn off when movement is no longer detected and the delay time has expired.
 - Load can also be manually switched off by operating external push button.

3.3 Wiring

3.3.1 MY-P109-RR

3.3.1.1 Normal operation (see FIG.5)

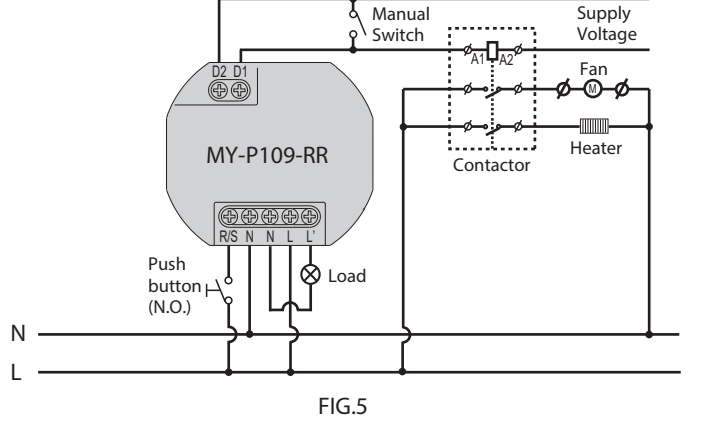


FIG.5

3.3.1.2 Staircase timer switch controlled by one sensor (Time1 should be set to $\sqrt{1s}$ see FIG.6)

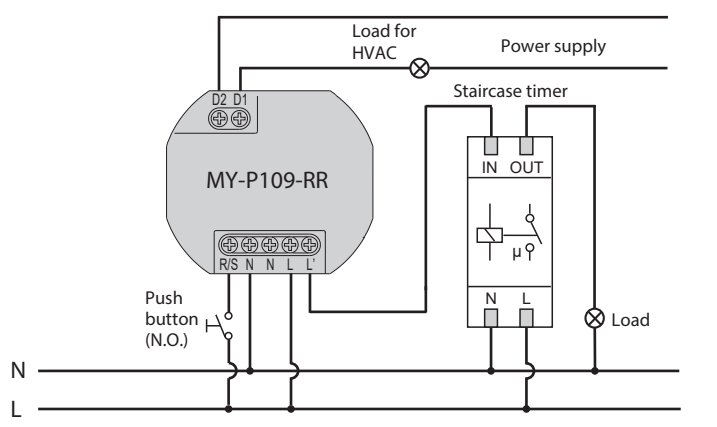


FIG.6

3.3.1.3 Master / Slave operation: Max. 10pcs slave detectors can be connected to R/S terminal of the master detector (see FIG.7). The maximum cable length between the first detector and the last detector must not exceed 100m, and each two detectors should be at least 1m.

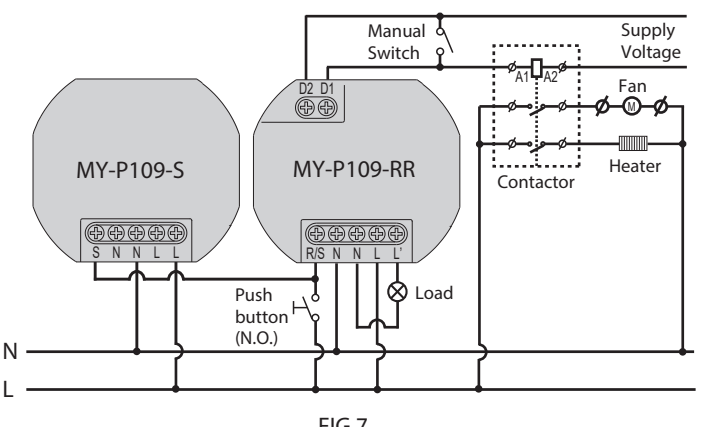


FIG.7

3.4 Installation procedure

- 3.4.1 Ceiling flush mounting
To install detector, drill a 65mm diameter hole in ceiling, and keep the power cable outside. Strip off 6 - 8mm of cable sheathing for wiring (see FIG. 8).

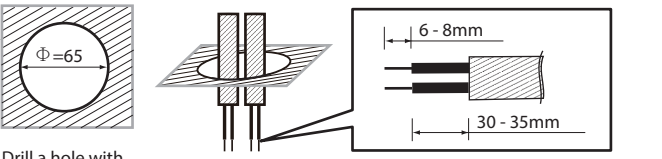


FIG.8

- 3.4.2 Use screwdriver to loosen the two screws to remove the protection cap.
- 3.4.3 Break the rubber gasket, then feed cables through (see FIG. 9).

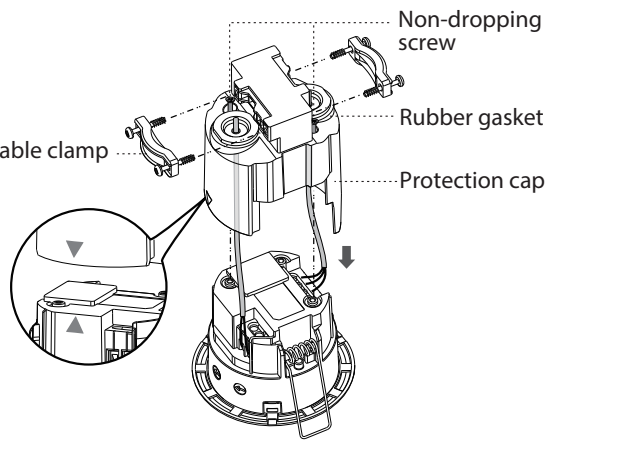


FIG.9

- 3.4.4 Refer to FIG.5 - FIG.7 for correct and ensure “ ∇ ” symbol of the protection cap is aligned with the “ \blacktriangle ” symbol of housing (see FIG.9), then screw the protection cap back on securely.

- 3.4.5 The cable clamp has two grooves for holding cables in different diameters (see FIG.10-A).

	Big groove	Small groove
Small groove	For round cable of $\Phi 5 - \Phi 12.5mm$	For round cable of $\Phi 3 - \Phi 5mm$
Big groove	For 2 round cables of $\Phi 5 - \Phi 6mm$	For 2 round cables of $\Phi 3mm$
	For one or two flat cable(s) of 4 x 8mm	

FIG.10-A

- 3.4.6 Lift up the two spring clips of the detector and insert detector into drilled hole in ceiling (see FIG.10-B).

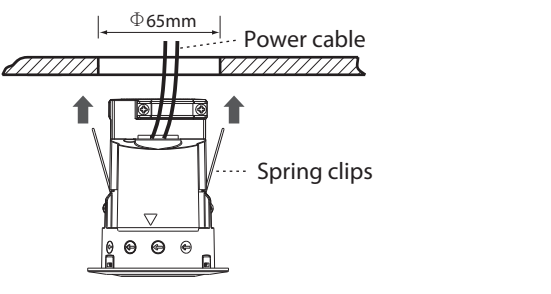


FIG.10-B

- 3.4.7 Restore power supply.

4 OPERATION AND FUNCTION

4.1 Lux, Time1 and Time2, Meter knob

Knob	Function	Knob setting
	Set ambient light value for switching on load (lighting)	Range : Adjustable from approx. 10Lux to “ ∞ ” (∞). Test : The actual ambient light level (10Lux - 2000Lux) can be read in.
	Set delay off time for load (lighting)	Range : Adjustable from approx. 5sec to 30min Test : Test mode (Load and red LED will be 2sec on, 2sec off) Test : Short impulse mode for staircase timer switch control (Load will be 1sec on, 9sec off)

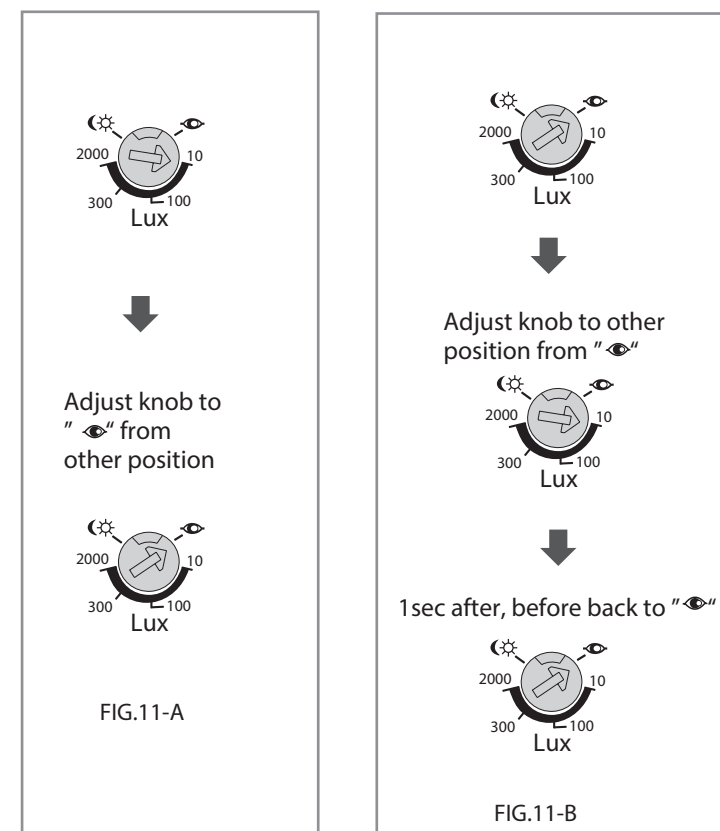
Knob	Function	Knob setting
	Set delay off time for load (HVAC)	Range: Adjustable from approx. 10sec to 60min (Reaction is regardless of Lux value)
	Set the detection range	Range: Adjustable from “-” (approx. $\Phi 2m$) to “+” (approx. $\Phi 9m$)

4.2 Lux learning function with knob

Learning procedure:

- 4.2.1 Adjust the knob to “ ∞ ” when the ambient light level matches desired setting (see FIG.11-A).
- 4.2.2 When the knob is set to “ ∞ ” originally, it should be adjusted to any other position for more than 1sec, before turning back to “ ∞ ” (see FIG.11-B).
- 4.2.3 The load will be off and the LED starts to flash slowly indicating it is in learn mode. Learning will be completed within 25 seconds. To confirm learning has been successful the LED and load will stay on for 5sec or LED will flash and load is off. (see FIG.11-C).

4.2.4 After learning procedure is completed, the detector returns to AUTO mode with LED and load off.



NOTE

- When the actual light level is out of range 10 - 2000Lux, detector will learn for 25sec, before the red LED flashes quickly for 5sec. When the actual light level is below 10Lux, Lux value is set to 10Lux, or is above 2000Lux, Lux value is set to ∞ (uncontrolled by lux setting).
- Installer should be away from the detector to avoid affecting the luminous flux that reaches the detector when learning Lux value.

4.3 Usage of lens shield

4.3.1 MY-P109-RR / MY-P109-S Two lens shields are included masking the undesired detection area. Each lens shield has 3 layers (Layer A / Layer B / Layer C). Each layer includes 6 small segments and each small segment can cover a 30° detection angle. For example, if the detector is installed at the height of 2.5m, the detection range can reach up to 2m diameter if the two complete lens shields are used; and up to 5m diameter if A & B layers of the two lens shield are used; and up to 7m diameter if only the A layer of the two lens shield is used; see (FIG.12-A).

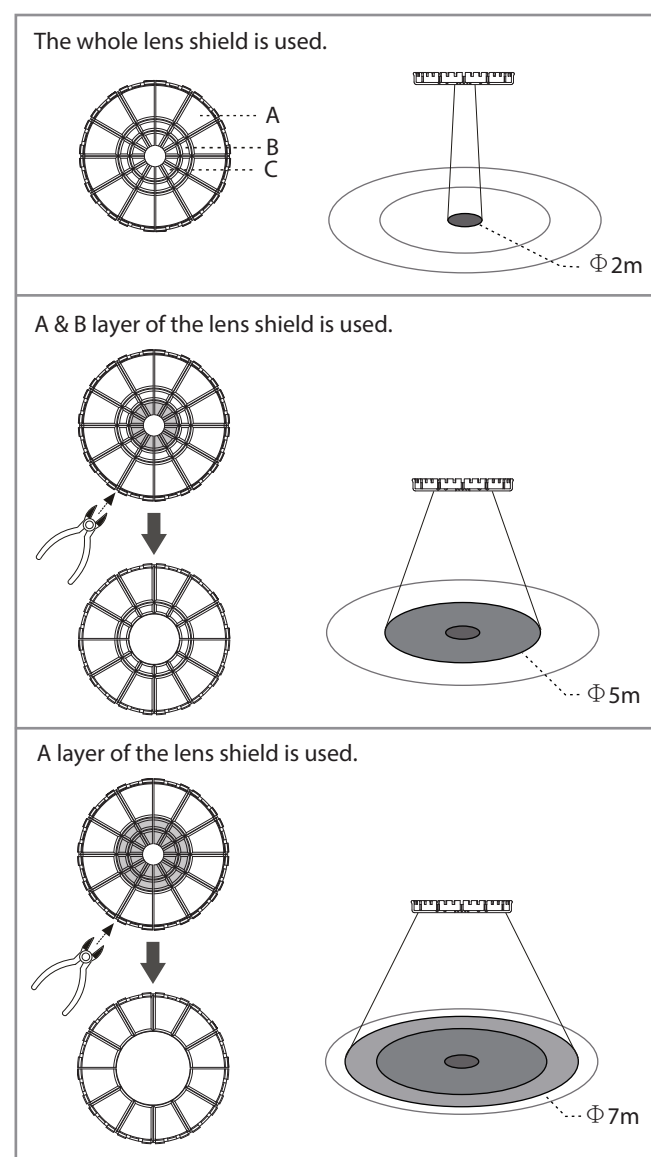


FIG.12-A

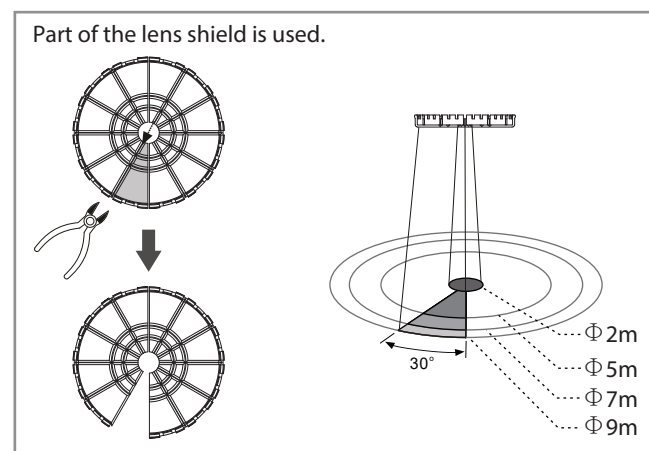


FIG.12-B

- The shadow part of the lens shields in FIG.12-A & FIG.12-B is referring to the cut off parts.

4.3.2 After choosing the desired detection area, the redundant lens shield should be discarded.

4.3.3 Fixing lens shield: There is a circular hook on the back of the decorative frame which fits the circular groove of the lens shield. The lens shield can be fitted by joining its groove with the corresponding hook on the decorative frame (see FIG.13)

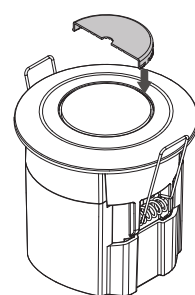


FIG.13

4.4 Walk test (Lux setting is inactive)

The purpose of conducting a walk test is to check and adjust detection coverage. Set Time knob to "Test", Meter knob to "+", then initiate a walk test referring to the following steps.

NOTE

It takes approx. 60sec for detector to warm up after power is supplied, then detector enters into normal operation to carry out a walk test.

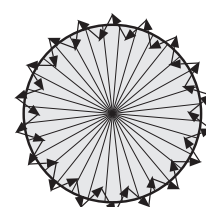


FIG.14

4.4.1 Test procedure

- 4.4.1.1 Tester must be within the detection coverage.
- 4.4.1.2 Switch power on.
- 4.4.1.3 It takes approx. 60sec for detector to warm up with load and red LED is on, then turns off after warming up time.
- 4.4.1.4 Walk from outside across the detection pattern until red LED turns on for approx. 2sec then off, the next trigger should be 2sec interval (see FIG.14).
- 4.4.1.5 Adjust Meter knob or lens shield to achieve desired coverage.
- 4.4.1.6 Repeat steps 4.4.1.4 and 4.4.1.5 until testing is complete.

5 TROUBLE SHOOTING

The following table outlines common trouble shooting issues and relevant solution.

Problem	Possible cause	Suggested solution
Lighting device does not turn on	1. No power	1. Switch on power.
	2. Incorrect wiring.	2. Refer to wiring diagrams and check correctly wired.
	3. Incorrect Lux knob setting.	3. Set Lux knob to "∞" and check if load is on.
	4. Malfunctioned load.	4. Replace the disabled load with a new one.
Lighting device does not turn off	1. Auto off time is set too long.	1. Set auto off time to a shorter time and check if the load is switched off or not according to the pre-set off time.
	2. Detector is nuisance triggered.	2. Keep away from detection coverage to avoid activating detector while testing.
	3. Incorrect wiring.	3. Refer to wiring diagrams and check correctly wired.
LED does not turn on	1. Time knob is not set to "Test".	1. Set the Time knob to "Test" to check if LED is on.
	2. Exceeds detection range.	2. Walk the effected detection range of 9m diameter.
Nuisance triggered	There are heat sources, highly reflective objects or objects effected by air movement within the detection coverage.	Avoid aiming the detector towards any heat sources such as air conditioning, electric fans, heaters or any highly reflective surfaces. Make sure there are no objects effected by air movement within the detection coverage.

6 OPTIONAL ACCESSORY

6.1 For easy and safe setting operations we highly recommend our optional IR remote control MY-R11. (see FIG.15).

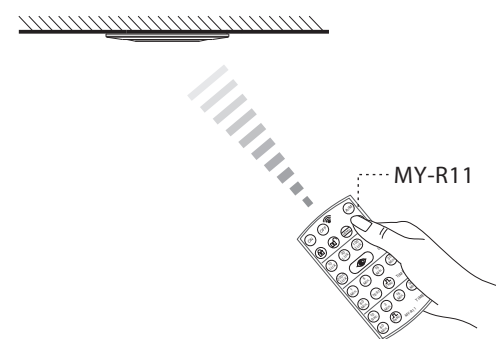


FIG.15

6.2 IR remote control function:

Button	Function
ON	To set Load I (CH1) on for 8hrs <ul style="list-style-type: none"> By pressing "ON" button, the load of the detector will be turned on for 8 hours. Load will be turned off after 8 hours and return to auto mode. Or press "ON" button again to exit the "8 hour on mode" during this period, detector will return to auto mode. Or switch off power supply to presence detector for 5sec to reset auto mode. Load I (CH1) can be set to off mode by pressing "OFF" button under on mode.
OFF	To set Load I (CH1) off for 8hrs <ul style="list-style-type: none"> By pressing "OFF" button, the load of the detector will be turned off for 8 hours. Detector will return to auto mode after 8 hours. Or, press "OFF" button again to exit the "8 hours off mode" during this period, detector will return to auto mode. Or switch off power supply to presence detector for 5sec to reset auto mode. Load I (CH1) can be lead to on mode by pressing "ON" button under off mode.
Lock	To lock MY-R11 buttons By pressing "Lock" button, MY-R11 buttons will be locked and no key function is possible (except "Test" button).
Unlock	Unlock MY-R11 buttons By pressing "Unlock" button, MY-R11 buttons are unlocked and functional.
AM	Exchanging auto mode and semi auto mode By pressing "AM", detector enters auto mode with red LED flashing quickly for 2sec regardless if locked or not. Then, press "AM" again for detector to engage semi-auto mode with red LED on for 2sec.
MEMO	To save latest setting values and duplicate to other detector <ol style="list-style-type: none"> Set the desired Lux and Time values on one detector by using IR remote control MY-R11. Press the memo button for approx. 3sec ensuring it is aimed at above detector, to save the Lux and time setting of this detector. Detector's LED will flash during this stage. Aim IR remote control at a new detector and press "MEMO" button for approx. 1sec. Saved settings are now applied to the new detector. Repeat Step 3 as required. If no data has been saved in IR remote control, then detector will have no signal response after pressing "MEMO" button. If battery is removed for more than 5sec or "MEMO" button is pressed, all the data in IR remote control is deleted.
RESET	To reset settings on Presence Detector By pressing "RESET" button, all settings on the presence detector will go back to potentiometers' setting, and all MEMO data will be deleted.

Button	Function
10 LUX / 2000 LUX	To adjust Lux value By pressing corresponding button, the selected light level threshold will be set to presence detector for switching on the connected load.
Eye icon	To read-in the actual light level Actual light level can be read-in as a threshold for switching the connected load, if the preset Lux values do not match required setting. Take the following steps: Press "Eye" button until the detector's red LED flashes indicating it is entering learn mode, learning time is 10sec. The actual light value is read-in and confirmed by both the load and LED turning on for 5sec. The load then turns off and returns to auto mode. Note: If the ambient light level is out of the range of 10 - 2000Lux, detector will learn for 10sec, then LED flashes quickly for 5sec, and the alternative of 10Lux or ∞ value will be stored depending on under 10Lux or above 2000Lux value.
1 Min. / 60 Min.	To set delay off TIME1 (Lighting) By pressing corresponding button, the desired switching off delay time of Load I (CH1) can be exactly set, it is confirmed by flashing of detector's LED for 2sec.
TEST	Test mode <ul style="list-style-type: none"> Press "TEST" button to enter into Test mode, detector's LED will flash for 2sec for confirmation. Walking through the detection coverage, both Load I (CH1) and detector's LED turn on 2sec once detector is triggered (reaction is regardless of Lux value). Load II (CH2) has no reaction in test mode.
1Sec	Short impulse mode for Load I (CH1) Press "1Sec" button to enter Short Impulse mode, detector's LED will flash for 2sec for confirmation. Load I (CH1) will turn on 1sec and off for 9sec when movement is detected. The detector will then respond to movement and the pre-set Lux value.
10 Sec. / 60 Min.	To set delay off TIME2 (HVAC) Press corresponding button, to set the desired off delay time for Load II (CH2) HVAC. Detector's LED will flash for 2sec for confirmation. If detector has only one load, TIME2 is invalid.
5Sec	Short impulse mode for Load II (CH2) Press "5Sec" button to enter Short Impulse mode, detector's LED will flash for 2sec for confirmation. Load II (CH2) will turn on 5sec and off for 5sec when the detector detects movement. Detector acts on movement according to Short Impulse mode.

6.3 Trouble shooting of MY-R11

The following table outlines common trouble shooting issues and relevant solution.

Problem	Possible cause	Suggested solution
Detector fails to receive signal	1. Exceeds the transmission range. 2. Low battery power. 3. Detector not working correctly.	1. Operate within transmission range (≤10m), and ensure MY-R11 is aimed directly at the detector. 2. Replace battery. 3. Refer to Section 5 TROUBLE SHOOTING
No signal	1. Low battery power. 2. Pressed two or more buttons at once.	1. Replace battery. 2. Press one button at a time.
Fail to transmit signal	In locked mode.	Unlock MY-R11.

mySmart

Copyright©2017 mySmart Pty Ltd.
 All rights reserved. No reproduction, copy, or transmission of this product may be made without written permission.