

# SURFACE MOUNTED MOTION DETECTOR

DM BRA 000



## INSTRUCTION MANUAL

### Technical specifications

- Rated Voltage: 230V~ ± 10% 50/60Hz
- Consumption: < 1W
- Maximum Load: free-voltage contact
- Lighting:
  - Incandescent lamp: 2000W
  - AC Halogen lamp: 1000W
  - LV Halogen lamp: 1000VA/600W
  - Fluorescent lamp: 900VA (100 μF)
    - Electronic ballast: 25x(1x18W), 12x(2x18W), 15x(1x36W), 7x(2x36W), 10x(1x58W), 5x(2x58W)
  - LED lamp: 500VA/400W
  - Energy Saving lamp (CFL & PL): 600VA/400W
- HVAC:
  - Max. 5A / 250V<sub>AC</sub> (cosφ= 1) or 30V<sub>DC</sub>
  - Max. 3A / 250V<sub>AC</sub> (cosφ= 0,4)
- Detection Angle: 180°
- Detection Range: Max. 12m in frontward and 6m in each side, at 2m high and 20°~ 25°C
- Brightness Adjustment: 5 ~ 500 Lux and α
- Time Delay Adjustment: 5sec ~ 30min, Impulse & Test
- Sensitivity Adjustment: Adjustable
- Mounting: Wall or ceiling
- Environmental Protection: IP55, Class II
- Operating Temperature: -20°C ~ + 50°C

### CAUTION

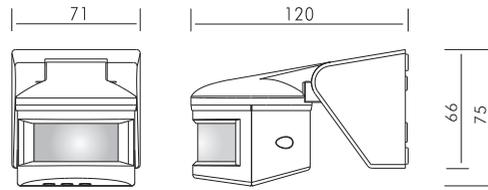
- According to EN60898-1, a circuit breaker (250V<sub>AC</sub>/10A) type C shall be installed in the fixed wiring for protection.
- Installation and assembly of electrical equipment must be carried out by qualified electricians.
- Do not mount on conductive surface.
- Turn off power when change the light sources.
- High in-rush current would be caused when bulbs of certain brands burned which might damage the unit permanently.

## 1 PRODUCT DESCRIPTION

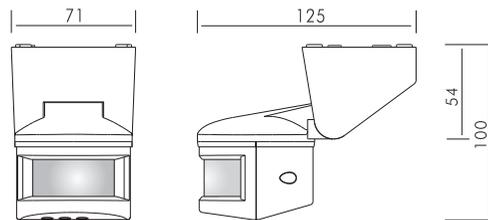
- Wall and ceiling mountable waterproof PIR motion detector.
- Detector head can be adjusted 90° up / 30° down / 90° left / 90° right for detecting angle adjustment.
- A photocell is built-in to allow automatically switching on/off the light as per the preset Lux value.
- Low standby power consumption.
- The user friendly Lux, Time and Meter adjusting functions are designed for user to set the control conditions of motion detector according to their requirements conveniently.
- Can be used to control lighting or HVAC device (free-voltage contact).

## 2 DIMENSIONS

Wall mount:



Ceiling mount:

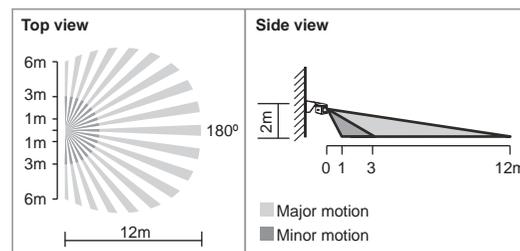


## 3 MOUNTING LOCATION

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

Select a proper location:

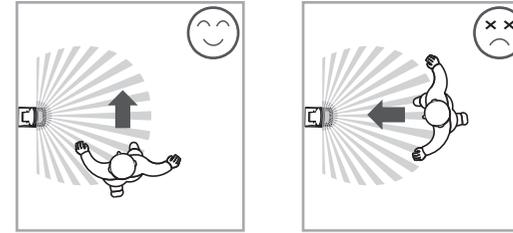
It can be mounted at the height of 2 - 3m although it is recommended to install the detector at 2m high in order to reach its maximum detection range. It can reach up to 12m in frontward and 6m in each sideward at the height of 2m.



Walking direction:

Pay attention to the walking direction at mount proceeding. The device is more sensitive to movement across the pattern than to movement directly towards detector.

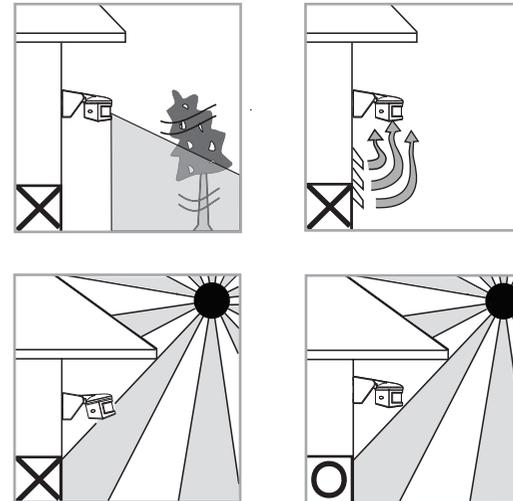
In the event that the motion is directly towards the detector, the coverage area will be reduced.



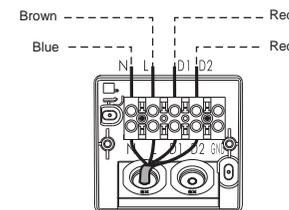
Helpful tips for installation:

Since the detector responds to temperature change, please avoid the following conditions:

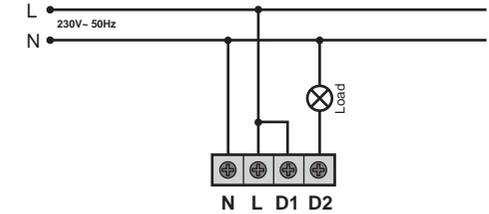
- Avoid pointing the detector toward the objects whose surfaces are highly reflective, such as mirrors, polished floors,...
- Avoid mounting the detector near heat sources, such as heating vents, air conditioners, lights,...
- Avoid aiming the detector toward the objects which may be swayed in the wind, such as curtains, tall plants,...



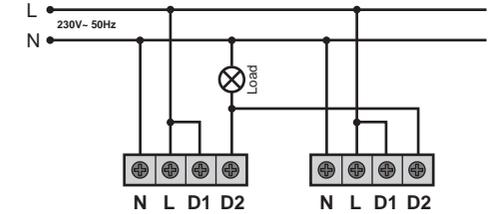
## 4 WIRING



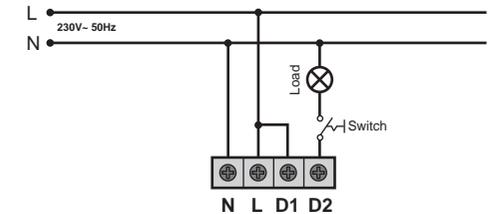
Simple installation:



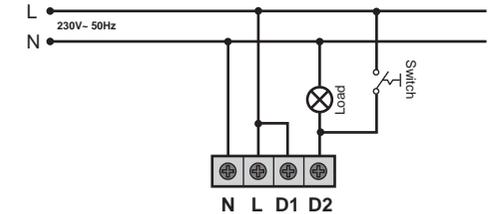
Two motion detections in parallel with one load:



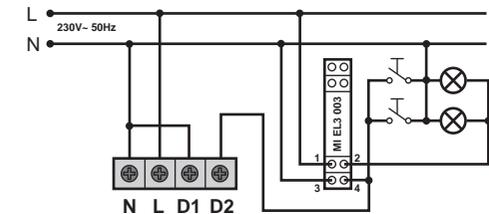
Installation with switch to enable or disable manually the motion detection:



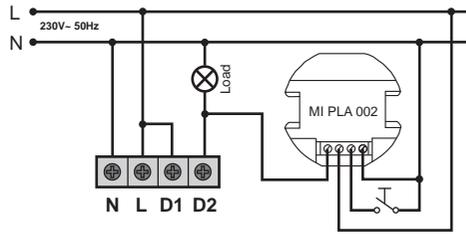
Installation with switch for permanent turning-on:



Staircase time switch (e.g.: MI EL3 003) controlled by one sensor:

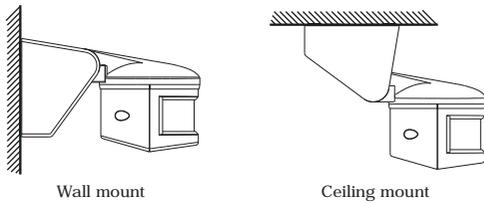


- Installation with a timer (e.g.: MI PLA 002) and pushbuttons:

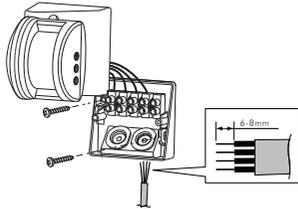


## 5 MOUNTING

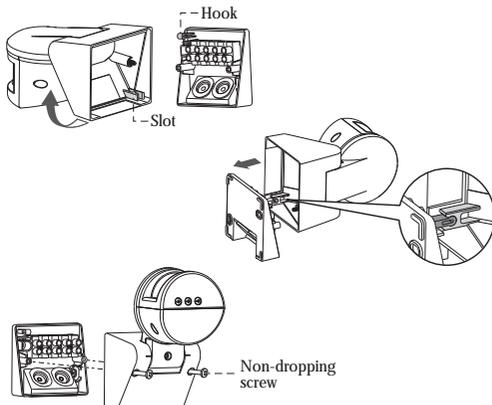
- The DM BRA 000 can be mounted either on the wall or on the ceiling.



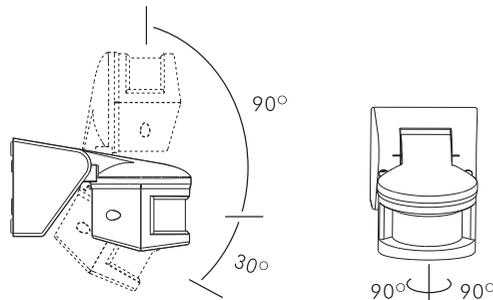
- Feed the electric cable through rubber gasket and make the wiring according to the diagrams.



- Fit the bottom cover on the wall firmly by two screws.  
- Fix the detector head to the bottom cover and adjust the detector head to be in the right position.



- Adjust detector head to get the desired detection field.



## 6 SETTINGS



### Time setting (Time)

Sets the switch-on delay time after a motion detection. This time is reset each time a new movement is detected.

Available values are:

- TEST: load and red LED will be 2sec. ON and 2sec. OFF. The brightness sensor will be deactivated.
- Range: adjustable from ~ 5sec. and 30min.
- Impulse ( $\sqrt{\text{IS}}$ ): short impulse mode for staircase time switch control. Load will be 1sec. ON and 9sec. OFF. The brightness sensor will be activated.

### Brightness setting (Lux)

Sets the light value for switching on load:

- '☾' (5Lux): the detector only works at night, without daylight.
- 3/4 (500Lux): The detector works wherever daylight is under 500Lux.
- '☼' ( $\alpha$ ): the detector operates at time, regardless of daylight. The light sensor is disabled.

### Sensitivity setting (Meter)

Adjusts the detector sensitivity:

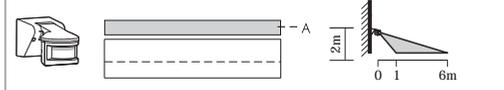
- '-': low sensitivity. Suitable for unstable environments with nearby heat sources that can activate the detector.
- '+': high sensitivity. Lets getting the maximum coverage.

## 7 LENS SHIELD LABEL

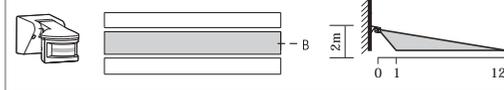
The attached lens shield label is used to reduce the detection coverage.

With the different layers of lables used, the different coverage can be obtained.

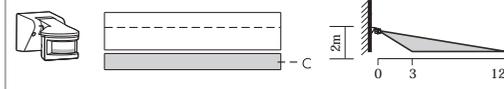
A layer is used:



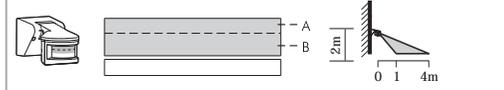
B layer is used:



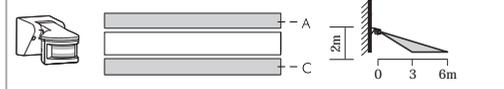
C layer is used:



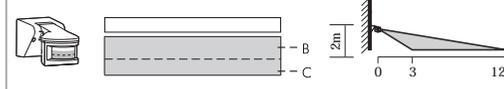
A & B layers are used:



A & C layers are used:



B & C layers are used:



## 9 TROUBLE SHOOTING

Problem	Possible cause	Suggested solution
Lighting does not turn on	1. Power does not turn on	1. Switch on the power
	2. Wired incorrectly	2. Refer to wiring diagrams for correct connection
	3. Lux knob adjusted incorrectly	3. Check if the Lux knob is set correctly
	4. Malfunctioned load	4. Replace the load
Lighting 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 while doing test
	3. Wired incorrectly	3. Make sure load and wires are connected correctly
Nuisance triggered	There are heat sources, highly reflective objects or any objects which may be swayed in the wind within the detection coverage	Avoid aiming the detector towards any heat sources, such as air conditionings, electric fans, heaters or any highly reflective surfaces. Make sure there are no swaying objects within the detection coverage

### NOTE

- The following conditions may cause lower sensitivity:
  - In very foggy days, the sensitivity may be less due to moisture collecting on the lens.
  - In very hot days, the sensitivity may be less since high ambient temperature is close to body temperature.
  - In very cold days when heavy clothing is dressed, especially the facial area is covered, very little heat will be emitted from the body causing the unit to be less sensitivity.

## 8 WORKING TEST

### NOTE

It takes approx. 30sec for detector warm up after power is supplied, then enters into normal operation co conduct a walk test.

The purpose of walk test is to select a proper installation place and gain the detection coverage.

Please turn 'TIME' knob to 'TEST', 'LUX' knob to '☼' and METER knob '+'.  
During the test, the light will turn on for about 2sec when the detector is activated by moving object.

Follow these steps:

- Aim the detector toward the desired detection pattern.
- Warm up DM BRA 000 for about ~ 30sec.
- Walk across the pattern from outside of coverage pattern until the light turns on.
- Adjust the sensor head if it is necessary.
- Adjust 'METER' knob to reach desired coverage.
- Repeat the previous steps until it meers user's demands.