

# UNIVERSAL BOX MOUNTED MOTION DETECTOR

DM CAM 003



## INSTRUCTIONS MANUAL

### Technical specifications

- **Power supply:** 230V<sub>AC</sub> ±10% ~50 Hz
- **Power consumption:** <0.2W
- **Switching power:**
  - Incandescent lamps: 3-200W
  - 230V Halogen lamps: 3-200W
  - LV Halogen lamps with ferromagnetic transfo: 3-150W
  - 230V LED lamps: 3-100W (max. 16 lamps)
  - Electronic transfo (LC type): 3-100W
  - Fluorescence: 5-100W (max. 10uF)
  - Compact Fluorescent lamps: 5-100W (max. 8 lamps)
  - Extractor fans: 5-50VA
  - Contactors: with excitation currents > 16mA
  - Time switches: with leakage currents with pushbutton > 30mA (DINUY ref. MI EL3 003 & MI EL3 004)
- **External pushbuttons:**
  - Pushbutton without indicator lamp: unlimited.
  - Pushbutton with indicator lamp: none.
- **Detectors in parallel:** up to 15 (only in "Pulse" mode)
- **Coverage angle:** 200°
- **Coverage area:** 200°, max. 8m at 1,2m high and 18°C
- **Settings:** By control knobs
- **Level of luminosity:** 3 ~ 100Lux
- **Timing:** 30 seconds ~ 10 minutes
- **Pulse mode:** 4 seconds
- **Dimensions (mounted):** 80mm x 80mm
- **Environmental protection:** IP40, Class II
- **Working temperature:** -10°C ~ +45°C

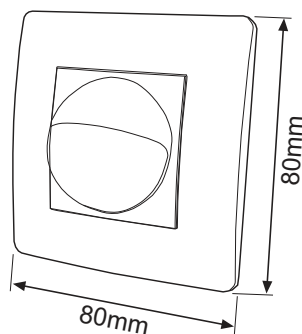
### WARNING

- Installation of electrical equipment must be carried out by qualified professionals.
- Disconnect from power supply before doing the installation.
- When some kinds of lamps blow, they can produce a very high current which could damage the detector.

## 1 DESCRIPTION

- Indoor universal mechanism box mounted movement detector.
- One no free-voltage switching channel.
- 2-wires installation (no Neutral-wire required) allowing direct replacement of a switch or a pushbutton with staircase time switch.
- Built-in light sensor which allows limiting its operation to the daylight.
- Includes 2 PIR sensors highly sensitive, allowing the detection of the slightest movement.
- Can be manually triggered through a pushbutton switch (without indicator lamp).
- The "Pulse" function allows, in the communities of neighbors with staircase time switch, replacing pushbuttons without changing existing installation.
- Application examples: corridors, public lavatories, staircases, etc.

## 2 DIMENSIONS



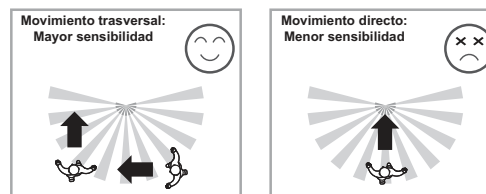
### A. Select a proper location:

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

- Avoid aiming the detector toward objects whose surfaces are highly reflective or are subject to rapid temperature changes.
- Avoid mounting the detector near heat sources, such as heating vents, air conditioners, dryers, etc.
- Do not aim the sensor towards any kind of light.
- Avoid aiming the detector towards objects which may move by wind, such as curtains, trees, bushes, etc.

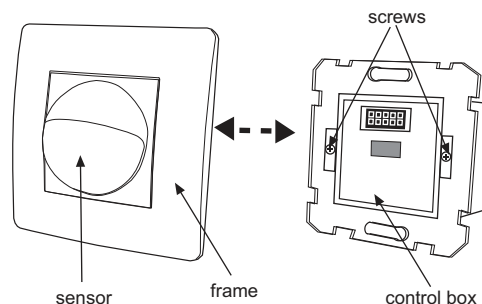
Take into account the walking direction when installing. It is more sensitive to movement across the detector and less sensitive to movement directly toward the detector.

**In the event that movement is directly toward the detector the detection coverage will be decreased.**



### B. Mounting:

- 1 - Disassemble the sensor from the control box stretching outward and detaching it from the metallic frame.
- 2 - Untwist the screws from the terminals and insert the cables according to the wiring diagram.
- 3 - Screw the terminals and make sure the wire are securely fixed.
- 4 - Fix the control box with the wires into the mechanism box through the two screws from the grips.
- 5 - Put the sensor with the plastic frame together. Then insert both into the universal box by means of hook aiming at the notch. Ensure the pin array and socket are well fixed.
- 6 - Supply power and carry out test to check the detector works normally.

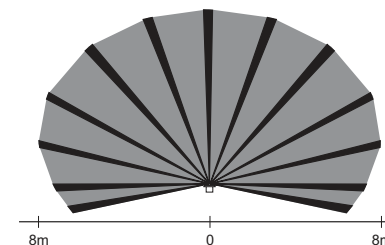


## 4 COVERAGE

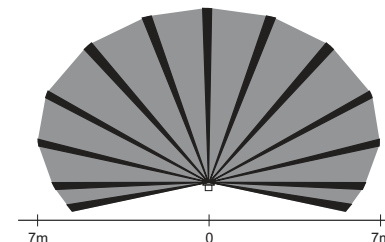
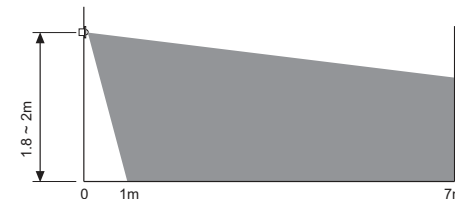
These detectors are designed for indoor installations and are specially appropriated for corridors, staircases, hotels...

It is recommended to install at the height of 1,2m ~ 2m.

The detection area depends on the height and the movement direction.



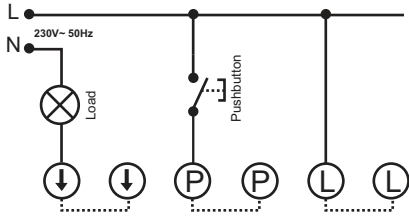
If the detector is installed at 1,8m ~ 2m high:



# 5 INSTALLATION AND WIRING

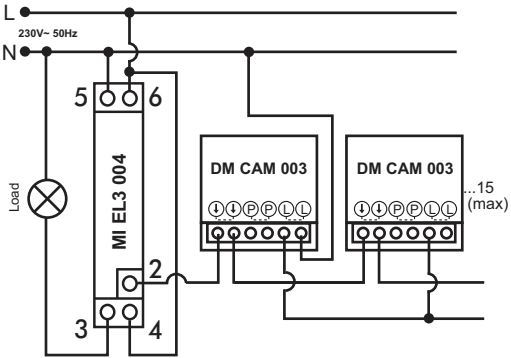
Refer to the following wiring diagrams when install the detector:

- One motion detector with non-lighted pushbutton (optional):



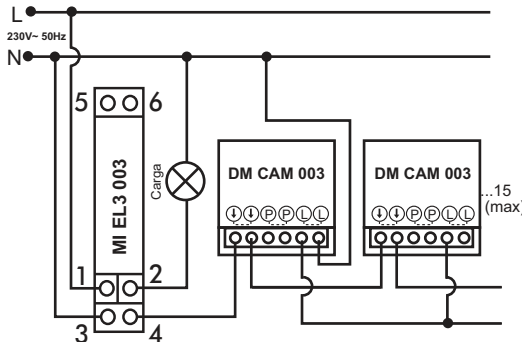
- Installation with one or several detectors in parallel with a staircase time switch MI EL3 004 (it is not allowed to install pushbuttons):

**This installation is only possible setting the TIME control knob at "Pulse" mode.**



- Installation with one or several detectors in parallel with a staircase time switch MI EL3 003 (it is not allowed to install pushbuttons):

**This installation is only possible setting the TIME control knob at "Pulse" mode.**



**It is only possible to install several detectors in parallel placing the TIME control knob in "Pulse" mode. It is very useful in applications with staircase time switches.**

# 6 SETTINGS AND TEST

## SETTINGS

Lux and Time settings can be adjusted through the control knobs or using the optional remote control (EM MAN DM0).



Set the Lux and Time settings according to the desired values:

### Luminosity level (LUX)

- Its function is to set the maximum brightness value below which the detector will activate the load as soon as it detects any small movement.
- The user can set this value according to his requirements, between 3 and 100 Lux.
- If the knob is set to "☾" the detector will only work in the dark, at night (if there is not enough daylight).
- If the knob is set to "☀" the light sensor is deactivated, it will switch the load on regardless the daylight level.



### Time delay (TIME)

- Sets the switch-on time after the last detection.
- There are 2 different working modes: PULSE mode and TIMING mode.
- a) TIMING mode**
- The switch-on time can be set between 30sec and 10min.
- After the first detection, the time is reset and the timing starts again each time a new movement is detected.
- This operating mode supports the installation of pushbuttons but **does not allow the connection of detectors in parallel.**



- After finishing the on time, the load is off and the detector remains not operative for a time of 2 seconds in order to avoid false detections due to the change of state of charge.

## b) PULSE mode

- This mode is selected by setting the potentiometer "TIME" in the position of "Pulse", as shown in the following figure:



- The main purpose of this mode is to directly replace the pushbuttons of an installation in which a staircase time switch is used for timing the switching of the lamps.
- This mode does not support the installation of additional buttons.
- The use of up to 15 detectors in parallel allowed.
- After detection, the relay is closed with a pulse of 4 seconds. Then the detectors remain inactive for a time of about 30 seconds.

## WORKING TEST

The purpose of the test procedure is to check and adjust the coverage pattern of the motion sensor when it is connected for the first time.

**Note** After connecting the power supply it is necessary to wait for 2 minutes before doing the test procedure.

The red LED, which is within the lens, can be used as an indicator when performing the test procedure, without any load. This LED lights whenever motion is detected. Turn the LUX knob to "☀" and TIME knob to "-".

Walk from outside across to the detection pattern until the LED and load is turned on.

Once verified that the working is successful, set the detector to the desired values.

# 7 TROUBLE RESOLUTION

When the detector stops working, check the possible failures and the solutions suggested in the following table that maybe will help you to solve the problem:

Problem	Possible cause	Suggested solution
Lamp does not light up	1. Power is not turned on	1. Supply the detector
	2. Wrong wiring	2. Check connections
	3. Incorrect setting of Lux	3. Check this setting
	4. Lamp may be defect	4. Replace lamp
Lamp stays ON continuously	1. El tiempo de desconexión fijado es demasiado largo	1. Reduzca el tiempo de desconexión y compruebe que las lámparas se apagan transcurrido el tiempo
	2. Thermal activity detected withing detection area	2. Remove heatsource (persons, animals, fans, etc.)
	3. Wrong wiring	3. Check connections
	4. Low load	4. Increase the load up to the minimum required by the detector
Lamp is switched on and off cyclically	The load (fluorescence, contactor,...) is continuously generating harmonics triggering the detector in each switching	Separate the detector from the load or connect a RC harmonic suppression filter between L' and N
Nuisance triggering	Heat sources, highly reflective objects or any object which may be swayed by the wind is within the detection range	Avoid aiming the detector towards any heat source, any reflective surface or swaying objects