

LRM 8117/00

Movement Detector - Aisle way



General

The LRM 8117/00 is a PIR (Passive Infra-red) sensor designed for aisle ways indoor applications, such as high rack storage areas in warehouses.

A dedicated bracket to click the sensor on the TTX400 trunking is available and can be ordered separately (ZTX400MB-MDU).

The LRM8117/00 is equipped with a daylight override option. In case sufficient daylight is present, the sensor will hold the output signal (lights will stay off) until the natural light level drops below the user-defined reference light level. This feature is disabled (factory setting). Please see below in the daylight override section the precautions related to the daylight override option in industrial aisle ways.

The LRM 8117/00 is always used in combination with an electric control unit (Linesense MDU or any other light controller of the HELIO, TRIOS, Wire-Master, LightMaster ranges)

Features

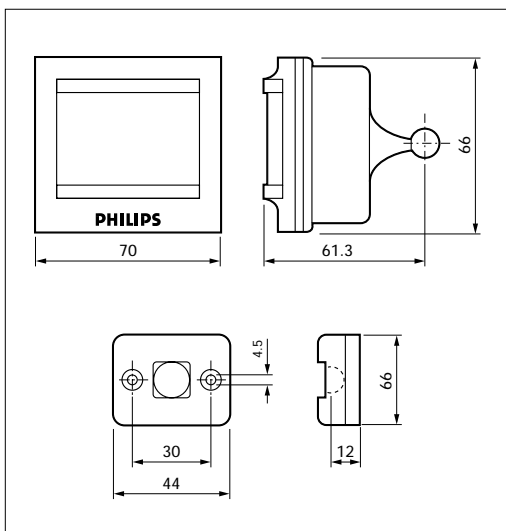
- Long and narrow coverage pattern for aisle ways (dimensions depend on the mounting height)
- Wide operating voltage range 12-24 VDC
- Easy to install and adjust
- Digital time delay (adjustable between 1 and 35 minutes)
- Smart "false on" prevention
- Daylight override option
- Low current consumption, max. 10mA
- LED indicator (light flashes when the sensor detects motion to verify proper installation and functioning).
- Attractive design

Application

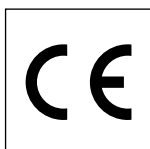
The LRM 8117/00 is most suitable for aisle ways where occupancy is infrequent or unpredictable. It can be mounted between 5 and 15 m from the floor.

It avoids energy waste from lights being on unnecessarily when spaces are unoccupied. When a lot of daylight is available, the daylight override option can bring an extra energy saving.

Because infrared occupancy sensors must have a direct line-of-sight to the motion, they should not be used where furniture, partitions or other objects are positioned between the sensor and the motion.



Dimensions in mm



Operation

Passive infrared occupancy sensors respond to movement of infrared sources, such as human bodies in motion. A special fresnel lens divides the field of view of the built-in sensor element into several sensor zones. When a heat source (human body) is crossing a zone, the sensor will respond (motion detected). The sensor's output signal can have two values:

1. Occupied (used by the controller unit to turn the lights on)
2. Un-occupied (used by the controller unit to turn the lights off)

Indication LED

The LRM 8117/00 contains a visible LED indicator. This LED is flashing when the sensor is detecting motion. The LED indication can be used to check the coverage pattern of the sensor after installation (walk test). The LED can be disabled by setting DIP switch 4 to OFF.

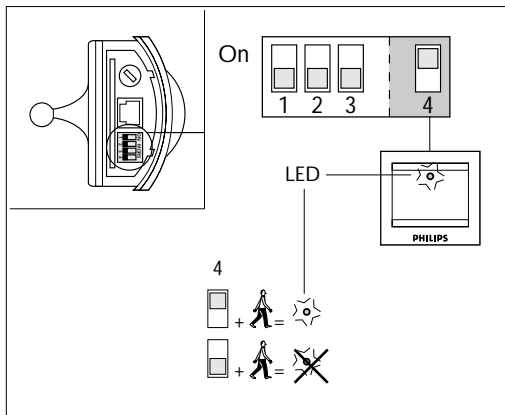


Figure 1 LED indication on/off

Power-up

After power-up, the indication LED is flashing for 15 seconds. During this "stabilisation" period, the output signal is set to "occupied". In case the sensor detects no motion at the end of this period, the output signal will set to "un-occupied" else the value of the output signal remains "occupied".

Time delay

The period between the last detected motion and the sensor's output signal is set to "un-occupied" can be set by means of DIP-switches.

Setting the time delay poses a trade-off between saving energy and avoiding occupancy complaints. Reducing the time will increase energy saving but will also increase the possibility of the lights being switched off while the room is occupied (in case of small motions). The factory setting is 10 minutes.

The DIP-switch setting for each time delay is illustrated in figure 2.

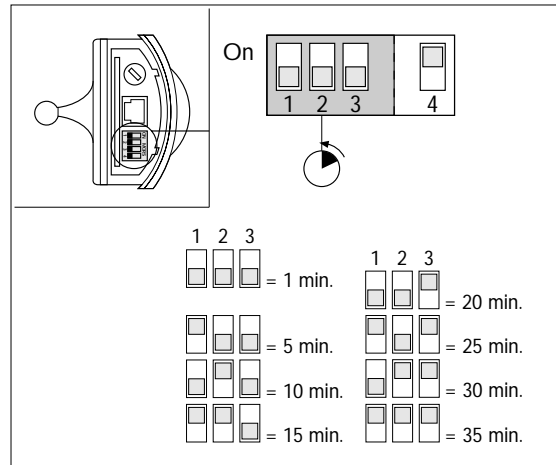


Figure 2 DIP-switch setting

Daylight override option

The LRM 8117/00 contains a built-in photocell and a potentiometer to adjust the reference light level. If adequate daylight is present, the sensor will hold the sensor's output signal "un-occupied" (lights stay off) until the natural light level drops below the reference light level.

The daylight override function can provide an extra energy saving as complement to movement detection for areas with a lot of daylight ingress.

The daylight override option is not activated in the factory settings.

Daylight override calibration

Calibration of the reference light level must be made at a time when the artificial lights would normally be off due to adequate natural light. *If this feature is not needed, leave the reference light level potentiometer at maximum (fully clockwise).*

Step 1: Adjust the reference light level setting to minimum (fully counter clockwise). The sensor's LED starts to flash and the output signal is set to "un-occupied". As a result of this the controller unit will turn the lights off. *This can take a while in case the delay timer of the controller is used. In that way it is recommended to set the delay timer of the controller to minimum and to use the delay timer of the sensor.*

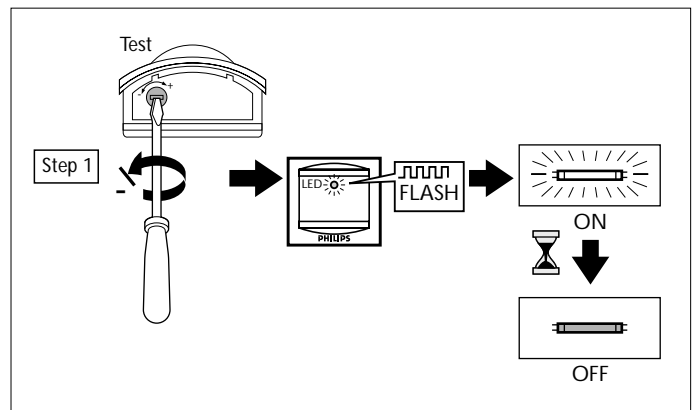


Figure 3 Daylight override calibration step 1

Step 2: Make sure that your body does not cast a shadow on the sensor. Turn the reference light level setting slowly clockwise. The LED will switch off. Turn the potentiometer until the LED just switches on again with a low intensity. After a few seconds, the LED switches off and the sensor turns back to the normal operational mode.

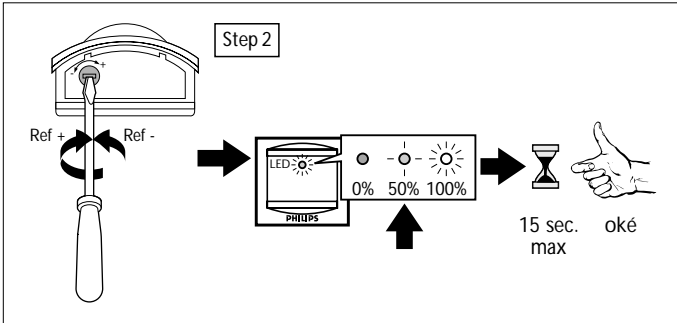


Figure 4 Daylight override calibration step 2

After calibration and during the occupied period, the artificial lights will stay off until the natural light level drops below the reference light level.

Note:

Auto switch off, during the occupied period, due to adequate natural light is not supported by the LRM 8117.

Warning for the use of the daylight override option in industrial aisle ways

While calibrating the sensor at a high distance from the floor it is difficult to avoid having one's hand in front of the sensor's lens. Furthermore, if the sensor is installed close to high racks, pallets stored at the higher level of the racks may be seen by the sensor. In both cases, the sensitivity of the sensor will be influenced abusively. In other words, the sensor will tend to measure that there is enough daylight whereas it is not the case. Light may then not switch on when expected. In order to prevent this, it is preferable to set the reference light level higher by turning the potmeter until the LED burns at its maximum intensity.

In most cases, several sensors will be connected into parallel to cover the whole aisle way. Step 1 of the calibration should then be performed for all sensors before starting step 2.

Coverage pattern

The length and the width of the detection area is a function of the installation height and depends on the tilt angle. At 10 m high, the detection area is 17,5 m to 20 m long (respectively for a tilt angle of 40° and 0°) and 0,70 m wide.

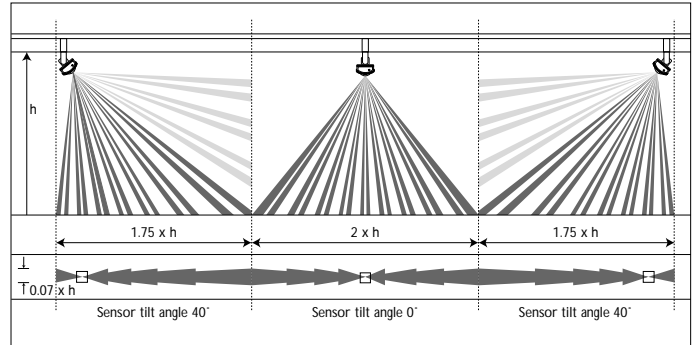


Figure 5 Coverage pattern of the LRM 8117 in funtion of the height (h) and the tilt angle

Mounting

The LRM 8117 shall be mounted between 5 and 15 m from the floor.

With the ZTX400MB-MDU

The bracket ZTX400MB-MDU shall be used to click the LRM 8117 to the TTX400 trunking without using any screw. The tilt angle of the bracket can be adjusted and memorized easily thanks to a click graduation, so that the same tilt angle can be repeated in other aisle ways.

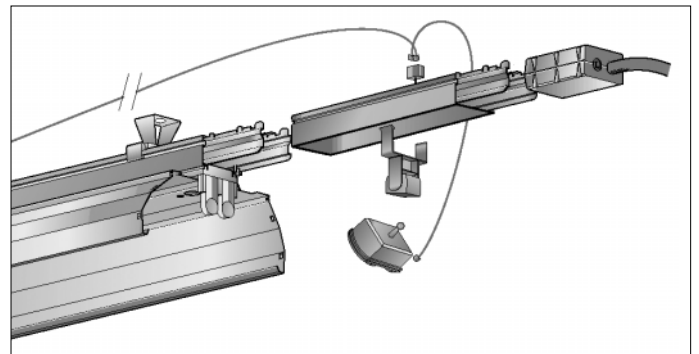


Figure 6 How to click the movement detector to the TTX400 trunking

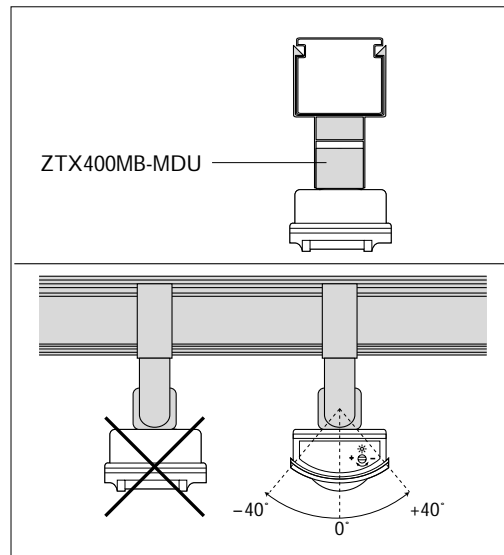


Figure 7 Position of the sensor head

Without the ZTX400MB-MDU

The swivel bracket can be mounted directly on any surface with screws. The plastic appendice should be cut off as showed in figure 8, before the movement detector is clicked into the swivel bracket. Then the right tilt angle can be adjusted (figure 9).

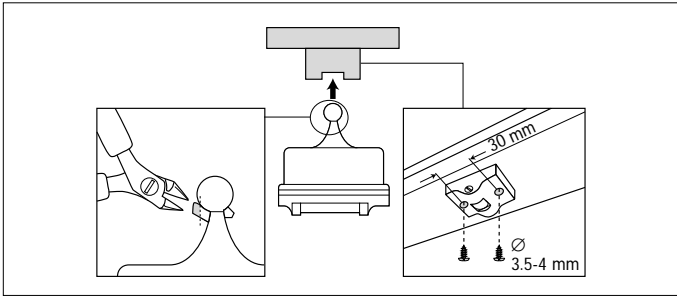


Figure 8 Installation of the LRM 8117/00 with the swivel bracket

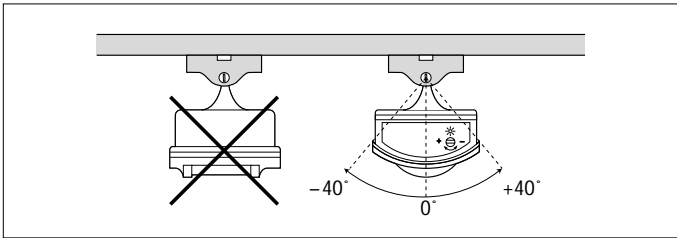


Figure 9 Position of the sensor head

To minimise "false on"

- Prevent direct sunlight from reaching the sensor
- Mount on stable surfaces
- Do not aim at heath sources
- Do not expose to air draughts

Connection cable

Linesense, HELIO, TRIOS

The sensor can be connected to these control units by means of the standard sensor cables: LCC 8014 (5m) or LCC 8011 (1m). Extensions can be made with a LCC 8012 (5m) or LCC 8013 (20m) sensor cable.

Several sensors can be connected into parallel thanks to a modular T adapter such as Radiall R280MOD766 or equivalent.

WireMaster and LightMaster

These control units are supplied with a screw connector instead of a modular jack entry. It is still possible to use the standard sensor cables, however one modular plug must be replaced by a input screw connector. For connections see figure 10.

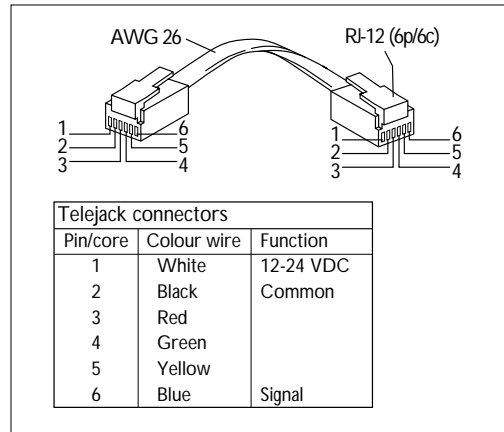


Figure 10 Sensor connection

Specifications

Electrical

- Operating voltage: 12 to 24 VDC \pm 10%
- Supply current: LED disabled 8mA (typical), LED enabled 10mA (typical)
- Output signal: Open-collector output, normally open, Max. 50mA sinking
- Diagnostics: Red "walk test" LED (can be disabled by means of DIP switch)
- Time delay: Digital time delay 1,5,10,15,20,25,30 or 35 minutes (selectable by means of DIP switches)
- Connector: Modular jack entry for RJ12 modular plugs.

Optical

- Detection pattern: 90° wide angle lens with 9 beams in 1 detection layer.
- Daylight override: Adjustable between 100 to 1000+ lux. This option is disabled in the factory setting and can be enabled manually

Mounting

- Mounting height: 5 ... 15 m
- Mounting bracket: Adjustable swivel bracket. For TTX400 trunking mounting: ZTX400-MDU bracket can be ordered separately

Environmental

- Operating temperature: 5°C to 50°C (RH 20% to 85%)
- Storage temperature: -25°C to 85°C (RH 10% to 95%)

Housing

- Colour: White (RAL 9010)
- Material: Polycarbonate
- Flame rate: V0

Packing data

Type	Box dimensions (mm)	Quantity	Material	Weight (Kg)	
				net	gross
Unit box	81 x 72 x 73	1	card board	65 g	94 g
Outer box	230 x 180 x 160	12	card board	780 g	1128 g

Ordering Data

Type	MOQ	Ordering number	EAN code level 1	EAN code level 3
LRM 8117/00	12	9137 003 17403	87 11559 518 473	87 11559 518 480