

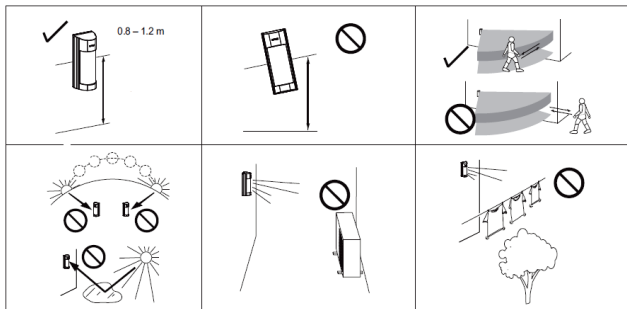
The JA-159P wireless outdoor PIR detector

The JA-159P wireless outdoor intruder detector is designed to detect human body movement in an outdoor environment. It is the VXi-RAM detector produced by Optex with a Jablotron transmitter. The optical part of the detector has 2 PIR sensors (dual zone detection) and a high immunity to false alarms and the detection of small animals. The detector includes an Anti-masking function – protection against covering the view and it also has two tampers (front and back) built in. They immediately report opening the detector or attempting tampering. The detector should be installed by a trained technician with a valid certificate issued by an authorised distributor.

Installation

Conditions:

1. The detector has to be installed onto a vertical wall (in a position where its bottom surface is parallel to the watched zone).
2. The detector should be installed 0.8 – 1.2 m above the ground.
3. The best movement detection is provided when the detection beams intersect.
4. No other moving objects (bushes, trees, high grass, air-conditioners, etc.) should be situated in the field of view of the detector.
5. Avoid direct effects by strong sources of light (sun reflections, etc.).



Procedure:

1. Unscrew the locking screw on the bottom of the upper cover of the detector (1) and remove the detection part's cover (1).
2. Unscrew the 2 screws which hold the detector's main board (2) and pull it out by tilting as you pull it out. There is also a radio transmitter glued onto the rear side of the detector's PCB.
3. Remove the rear box cap (5) by pulling it up.
4. Unscrew the 2 screws which link the rear cover (3) with the mounting plate (4).
5. The detector can be mounted onto a level mounting place by the 2 screws through the mounting plate (4). Or it can be mounted on a pole by metal ties (not supplied).
6. Put the detector parts back together in the opposite order when it's finally fixed to the mounting place (4).

Warning: Do not touch the detector sensing face during handling



If it does happen, it's necessary to clean it up by a cotton swab dipped in alcohol.

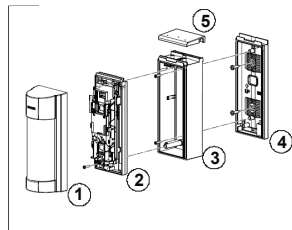


Fig. 1.: 1 – front cover, 2 – detector main board, 3 – rear cover, 4 – mounting plate, 5 – rear cover cap

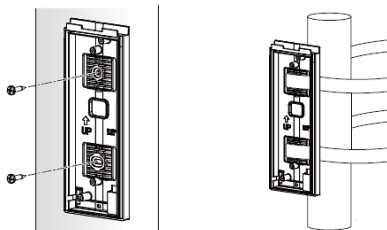


Fig. 2.: Detector installation. Standard wall installation and fixing by ties.

Enrolling the detector to the system

The signal transmitter for wireless communication is located under the main board part of the detector. The batteries are inserted into the battery holder placed on the transmitter PCB. Use two CR123A The JA-159P wireless outdoor PIR detector

(3 V, 1500 mAh) lithium batteries from the same manufacturer and replace both batteries at the same time. The correct position of the batteries is indicated on the battery holder.

Enrollment procedure to the system:

- a. Go to the **F-Link** software, select the required position in the **Devices** window and launch the enrollment mode by clicking on the **Enroll** option.
- b. Insert the batteries (mind the correct polarity). When the first battery has been inserted into the battery holder an enrollment signal is transmitted to the control panel and the detector is enrolled to the selected position.
- c. Assemble the detector in opposite order to which it was disassembled.

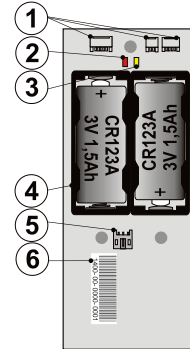


Fig. 3 - Transmitter: 1 – terminals for connection to the detector, 2 – red indication LED; 3 - yellow indication LED; 4 - battery holder; 5 – external antenna connector; 6 – production code

Notes:

- There must be a JA-110R radio module installed in the control panel.
- The detector can also be enrolled into the system by entering its production code (9) in the F-Link software. You can find the production code on the sticker, glued onto the PCB. All numbers under the bar code shall be entered (1400-00-0000-0001).
- If needed the transmitter can be equipped with an AN-868 (3 PIN) external antenna connected to the connector (5).

Normal operating mode

The detector sends a radio signal about activation when it is triggered. In the case of tampering with the detector or tearing the detector off its position the detector sends a tamper signal. Every 9 minutes a status report is sent to the control panel.

Replacing the batteries

The detector checks its battery status automatically and if the batteries are running low it informs the system. The detector remains fully functional. The batteries should be changed as soon as possible.

Before battery replacement the control panel has to be switched to service mode (see installation manual of the control panel) and then it is possible to open the cover of the detector. Always use CR123A (3V, 1500 mAh) batteries.

Setting up the optical part of the detector

The optical part of the detector includes 2 PIR sensors with AND logic. They detect movement in two planes. The detecting angle of the lower PIR sensor can be adjusted. The alarm signal is triggered if only both detecting planes are triggered at the same time. By shifting the lens set up the tilt of the lower detecting plane according to the following picture and table.

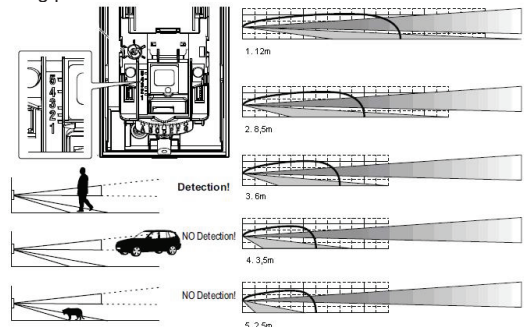


Fig. 4.

The JA-159P wireless outdoor PIR detector

The following table represents the values included in the figure:

Position	Maximum range of the lower detecting part	
	Average value	see following limits:
1	12 m	10 to 17 m
2	8.5 m	7 to 12 m
3	6 m	5 to 8.5 m
4	3.5 m	3 to 6 m
5	2.5 m	2 to 3.5 m

Table 1.

Warning: The maximum detection length of the lower detection plane may vary as above due to environmental thermal conditions. This must be taken into consideration during detection range adjustment.

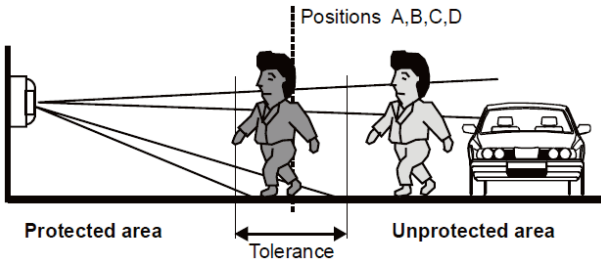


Fig. 5.

The detection area angle is 90°. The direction can be adjusted from position A – G by rotating the detector's plastic part. Each step is marked. The detector lens covers the whole angle of 180° - therefore it does not require any adjustment.

You can restrict the detection angle by adhesive masking strips supplied with the package. This way you can eliminate problematic parts of the detection area. The strips are to be stuck on the relevant lens segment from the inner side.

The PIR detection sensitivity can be configured by a 3-pole switch located under the upper sensor. The letters correspond to sensitivity levels as follows:

- L** low – low sensitivity applicable to bad conditions
- M** middle – medium sensitivity
- H** high – high sensitivity

Other parameters can be configured using a DIP switch (factory settings highlighted by bold letters):

NORM	<input type="checkbox"/>	TEST
120s	<input type="checkbox"/>	
N.C.	<input type="checkbox"/>	
LED OFF	<input type="checkbox"/>	
Antimasking OFF	<input checked="" type="checkbox"/>	

NO

1	<input type="checkbox"/>	5s
2	<input type="checkbox"/>	N.O.
3	<input type="checkbox"/>	LED ON
4	<input type="checkbox"/>	Antimasking ON
5	<input checked="" type="checkbox"/>	

The LED (DIP switch no. 4) serves for PIR detector testing – checking the coverage. The detector always sends information to the control panel. For normal detector operation the LED should be turned off in order to save the battery.

The power save mode can be set up by DIP switch no. 2, select 5 s / 120 s. It determines the time when detector is able to detect movement again and send a new activation signal.

When Antimasking is ON (DIP switch no. 5), the detector monitors any masking of its view. When the power is turned on the detector starts with a 1 minute mode when the detector scans the environment and then starts a 10 minute test mode (antimasking is triggered when shielding of the detector takes at least 20 sec). In normal operation mode the detector has to be shielded for at least 3 minutes. Shielding signal management depends on system status. When the system / a section is unset where the detector has been assigned, a fault is triggered. When the system is set a tamper alarm is triggered.

Testing (coverage test)

DIP switch no. 1 is set to TEST mode as a factory default. We recommend switching DIP switches no. 2 and no. 4 to the ON position for testing purposes. Close the detector.

Test the detection range of the protected area and immunity out of the protected area. Bear in mind the potential change of detecting distance is influenced by the environment. Each movement is indicated by LED and it sends the information to the control panel (can be checked by F-Link software in the Diagnostics tab).

We recommend turning off the indication LED when the testing procedure is finished and to put DIP switch no. 1 to the NORM

position. Set the power save mode to 120 s to get a longer battery lifetime.

Troubleshooting

Problem	Cause of problem	Solution
The detector gives false intrusion alarms	Lower detection area is unnecessarily long.	Set up the detection area properly.
	The detector is exposed to direct/reflected light (sun light, car lights etc.).	Remove the reflector, mask the area exposed to the reflection of light or change the detector position.
	There is a moving object in the area (laundry on the clothes-line, plants etc.).	Remove the moving object or change the detector position. Or put the stickers on part of the lens to avoid detection in a problematical place.
Occasionally no reaction to movement	Lower detection area is unnecessarily short	Set the detection area properly
	Sensitivity is set to low (L).	Change sensitivity to medium (M) or high (H).
	The detector is in battery-save mode	While testing operation, set the battery-save timer to 5 seconds.
Detector ignores any movements	Low battery	Replace the battery
	LED does not indicate a thing	Indication is turned off, turn DIP switch no. 4 ON
	LED indicator lights but there is no reaction in the control panel.	The control panel is out of range, check the battery, try to reposition detector or control panel

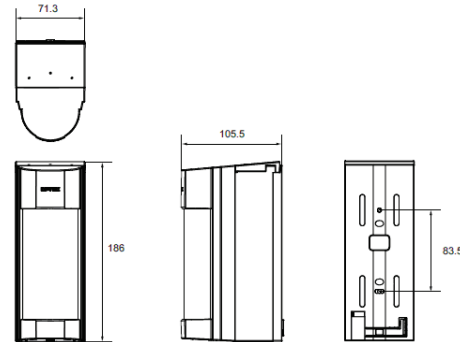


Fig. 6. Detector dimensions (mm)

on Technical specifications

Power: 2x Lithium battery type CR123A (3.0 V / 1.4 Ah)
 Please note: Batteries are not included
 Average battery lifetime: 2 x CR123A, approx. 3 years
 Communication band: 868.1 MHz
 RF range – communication range: up to 300 m (open area)

Optex detector parameter:
 Detection characteristics: 12 m / 90°; 16 segments
 Recommended installation height: 0.8 – 1.2 m
 Object motion speed: 0.3 – 1.5 ms⁻¹
 Battery saving timer: adjustable 5 s or 120 s

Operational environment according to EN 50131-1: IV
 Security grade: according to Optex
 Operating temperature range: -20 °C to +60 °C
 Detector cover conformance: IP55
 Max. relative humidity of the environment: 95 %
 Dimensions: 186 x 71.3 x 105.5 mm
 Weight: 500 g
 Complies with: ETSI EN 300 220, EN 50130-4, EN 55022, EN 60950-1

Can be operated according to ERC REC 70-03



JABLOTRON ALARMS a.s. hereby declares that the JA-159P is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC and 2011/65/EU. The original of the conformity assessment can be found at www.jablotron.com - Technical Support section.

Note: Although this product does not contain any harmful materials we suggest you return the product to the dealer or directly to the producer after use. For more detailed information visit www.jablotron.com.