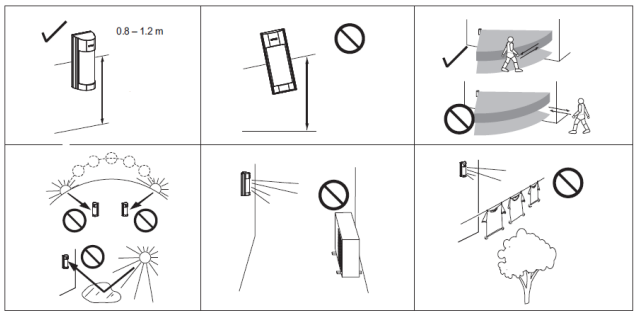
The JA-159P wireless outdoor PIR detector

This detector is a component of the JABLOTRON system. 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 transmitter JA-150TX-VXI produced by JABLOTRON a.s. 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).

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.

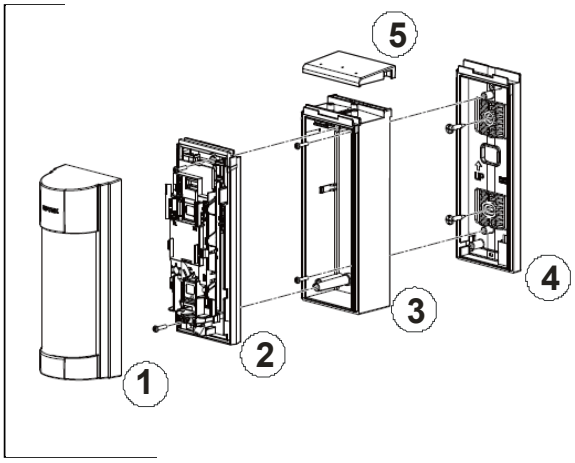


Fig. 1.: 1 – front cover, 2 – detector main board, 3 – rear cover, 4 – mounting plate, 5 – rear cover cap

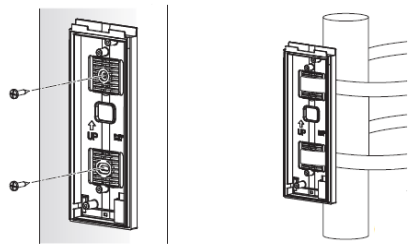


Fig. 2.: Detector installation. Standard wall installation and fixing by ties.

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 (3 V, 1.4 Ah) lithium batteries from the same manufacturer.** The correct position of the batteries is indicated on the battery holder.

Enrolment 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.

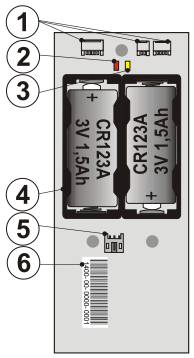


Fig. 3 – Transmitter JA-150TX-VXI: 1 – terminals for connection to the detector, 2 – red activation indication LED; 3 – yellow Antimasking activation and low battery indication LED; 4 – battery holder; 5 – external antenna connector; 6 – production code

Notes:

- There must be a JA-11xR 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.

Checking and replacing the batteries

The detector checks the battery status automatically. Nearly drained battery is reported by continuous flashing of yellow signalling LED on the detector (1 flash per sec) and at the same time low battery status is reported to the control panel. The detector remains fully functional. The battery should be changed as soon as possible.

The control panel must be in service mode **before battery changing** (see the control panel installation manual). Tamper contact must be pressed several times after opening the cover and removing the battery to discharge capacitors.

Use only lithium batteries CR123A (3 V, 1.4 Ah) from the same manufacturer. Always replace all batteries simultaneously.

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.

JABLOTRON a.s.
Pod Skalkou 4567/33 | 46601 | Jablonec n. Nisou
Czech Republic | www.jablotron.com

The JA-159P wireless outdoor PIR detector

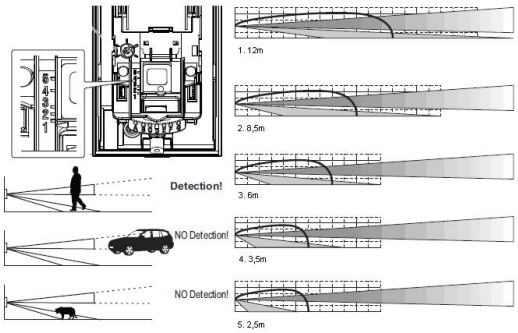


Fig. 4.

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.

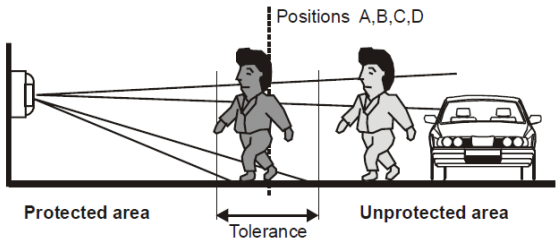


Fig. 5.

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
120s
N.C.
LED OFF
Antimasking OFF



TEST
5s
N.O.
LED ON
Antimasking ON

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 we recommend the LED to 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 obstruction of the detector takes at least 20 sec). In normal operation mode the detector has to be obstructed at least for 3 minutes. Evaluation of the obstructed detector signal depends on system status.

When the system or a section, where the detector has been assigned, is unset, a fault is triggered. When the system is set it will trigger fault + instant zone alarm. Activation of the detector obstruction signal (masking) is displayed with a yellow indication LED (which flashes briefly 3x every second).

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 the red indication LED and it sends the information to the control panel (can be checked by F-Link software in the Diagnostics tab).

When the testing procedure is finished, move the DIP switch no. 1 to the NORM position. Also, we recommend turning off the LED indication and setting the power save mode to 120 s to prolong the battery life.

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 indicator does not indicate movement	Indication is turned off, turn DIP switch no. 4 ON
	LED indicator indicates movement but the system doesn't react	The control panel is out of range, check the battery, try to reposition detector or control panel

Technical specifications

Power:	*2x Lithium battery type CR123A (3.0 V/1.4 Ah)*
	Please note: Batteries are not included
Current consumption (nominal/maximal)	35.5 µA/55 mA
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 a.s. hereby declares that the JA-159P composed of Optex detector VXI-RAM-NB and radio module JA-150TX-VXI is in a compliance with the relevant Union harmonisation legislation: Directives No: 2014/53/EU, 2014/35/EU, 2014/30/EU, 2011/65/EU. The original of the conformity assessment can be found at www.jablotron.com - Technical Section Downloads.

Note: Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling. Please return the product to the dealer or contact your local authority for further details of your nearest designated collection point.