

JA-160PC Wireless PIR motion detector with a verification camera

The JA-160PC is wireless component of the **JABLOTRON** system. It serves for the detection of human movement in building interiors and visual alarm confirmation. The camera takes colour photos with a resolution of up to 640 x 480 pixels by detecting human movement while the system is set. The camera is equipped with a visible flash for taking photos in the dark. The images are saved in the internal memory of the detector and then they are forwarded to the control panel. From the control panel they can be sent to MyJABLOTRON or ARC. The detector can also take a photo on request. The detector takes one position in the system and should be installed by a trained technician with a valid certificate issued by an authorised distributor. **This product is compatible with JA-101K, JA-102K, JA-103K, JA-106K, JA-107K, JA-151KRY and JA-152KRY control panels.**



The photo-verification can be used only after the registration of the system to MyJABLOTRON or with subsequent ARC service.

Installation

The detector can be installed onto a wall or in the corner of a room. There should be no obstacles which quickly change temperature (e.g. heating appliances,) or which move (e.g. curtains hanging above a radiator, robotic vacuum cleaners, pets) in the detector's field of sight. It is not recommended to install the detector opposite to windows or in places with over-intense air circulation (close to ventilators, heat sources, air conditioning outlets, unsealed doors, etc.). There should be no obstacles in front of the detector which might obstruct its view of the protected area.



Figure: Description of external parts of the product

- 1 – flash for illumination; 2 – camera lens;
3 – PIR detector lens; 4 – cover tab;



Avoid installation too close to a ceiling. Using flash may cause over-exposure of the scene due to reflections.

1. Open the detector cover by pushing the tab (4). Avoid touching the PIR sensor inside (15) – you could damage it.
2. Take out the PCB – it is held by a tab (9).
3. The recommended installation height is 2.5 m above the floor.
4. Screw the rear cover to the wall (vertically, cover tab down).
5. Re-insert the PCB and plug the connecting cable (6) into the connector on the PCB.

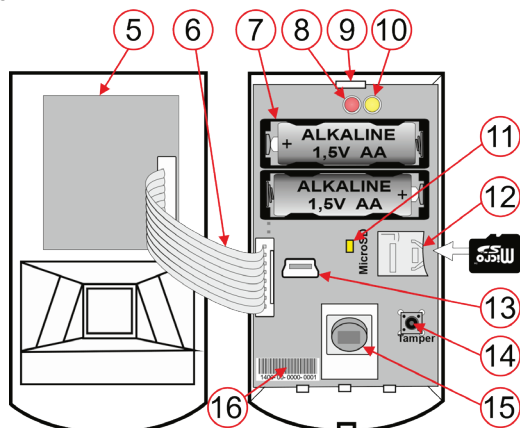


Figure: Description of internal parts of the product

- 5 – Camera module; 6 – connection cable; 7 – batteries; 8 – red LED;
9 – PCB tab; 10 – yellow LED; 11 – yellow LED of micro SD card;
12 – micro SD memory card; 13 – mini USB connector;
14 – tamper contact; 15 – PIR sensor; 16 – production code.

6. Proceed according to the control panel installation manual. Basic procedure:
 - a. There must be a JA-11xR radio module installed in the control panel.
 - b. Go to the **F-Link** software, select the required position in the **Devices** window and launch the enrolment mode by clicking on the **Enrol** option.
 - c. Insert the batteries (mind the correct polarity). When the second battery has been inserted into the detector, an enrolment signal is transmitted to the control panel and the detector is enrolled to the selected position. This is followed by up to three-minute detector stabilization phase indicated by the LED indicator flashing. If the discharged batteries have been inserted the red LED indicator flashes for 3 minutes.
 - d. If the detector is enrolled as the first PIR camera or the control panel is not connected to MyJABLOTRON, F-link shows a dialogue window with the question about enabling data transfer. We recommend enabling this option

with the agreement of the customer and confirming this acceptance by recording it in the system service log with his signature.

Note: If the transmission is not enabled, photos will be saved in the internal memory of the detector and the control panel. Then it is impossible to send them to MyJABLOTRON and ARC.

7. Close the detector cover and test its functionality.

Notes:

- When the control panel is in service mode, the detector indicates every movement with the red LED indicator.
- If you want to enrol the detector in the control panel after the battery has already been inserted, remove the battery first and then press and release the tamper contact (14) to discharge the rest of the energy and then enrol the detector.
- The detector can be enrolled by entering the production code (16) in the F-Link software (or a bar code reader). Enter all digits located below the bar code (1400-00-0000-0001).
- If you want to remove the detector from the system, erase it from its position in the control panel.
- In order to comply with the EN 50131-2-4 norm, the cover tab (4) must be secured with the recommended screw.

Detector internal settings

Settings can be set by **F-Link** software in the **Devices** tab. Use the **Internal settings** option on the detector's position to open a dialog window where you can configure the settings (* default settings):

PIR immunity level: Defines false alarm immunity. The **Standard* level combines basic immunity with a rapid reaction. The *Increased* level provides higher immunity but the detector reaction is slower.

PG output reaction: You can select PG outputs, whose activation will trigger taking a picture (* No, camera does not react to PG). For further info see *Installation recommendations, cautions*.

Taking a photo by PG activation: No flash, *With flash

Taking photos during entrance delay: *No flash, With flash

Taking photos during alarms: No flash, *With flash

Flash intensity: Low, *Medium, High – if the captured scene is over-exposed (e.g. in a small room), the intensity of the flash can be decreased. It can be increased for larger spaces (this option can decrease a battery lifetime).

Increased number of photos during alarm: When enabled, 3 photos are sent instead of 2 during each alarm event, that means more data transfer between the detector and the control panel and between the control panel and MyJABLOTRON or ARC. Enabling this option will decrease a battery lifetime. This option is for specific markets so we don't recommend enabling by default.

Send pre-alarm photos: This option is not available when the *Extended LQ* photo quality is selected due to more than double size of the photo and therefore longer transmission time. During every entrance delay, up to two photos can be taken when the detector is triggered even when the system has been unset properly.

This option will noticeably increase the volume of data transferred to MyJABLOTRON. If the system is not unset (alarm is triggered), the images taken during the entrance delay will be sent automatically regardless this option.

Lithium battery operation: If the detector is tasked with frequent operation (e.g. frequently requested photos by MyJABLOTRON) and is configured to high flash intensity, we recommend the use of AA 1.5 V lithium batteries. If you operate the detector from lithium batteries, this parameter must be enabled (it adjusts detection of low batteries).

Test: takes a test photo (LQ) with a flash and F-Link displays it. When the **Detail** button is pressed, the F-Link software shows the picture in a 640 x 480 px resolution. Photos are sent to MyJABLOTRON (provided that transferring is enabled).

Camera and basic reactions

The processing of how the camera takes pictures depends on the settings in the **F-Link** software – **Devices** tab. Choose the **Reaction** button on a particular detector line.

Instant: During an alarm triggered by the detector, the camera can be activated up to 3 times (then it will be auto-bypassed). Each activation, depending on the detected movement and settings, takes 3 photos maximum. Photos are sent to the control panel (9 photos maximum).

Delay: The first activation (entrance delay) takes up to 2 photos according to the detected movement and saves them into the internal memory (*Send pre-alarm image disabled*). When an alarm is triggered, photos are sent from the internal memory to the control panel. Then the behaviour is the same as an instant reaction (11 photos maximum).

Caution: When the *Device autobypass / 3rd alarm* is enabled (located in **Settings/Parameters**), then taking photos is blocked after the 3rd alarm. During each alarm the detector can be triggered up to three times. This way, the number of taken and transferred photos can be tripled (18/24 photos). Applies to Instant / Delayed reactions.

Installation recommendations, cautions

Several JA-160PC detectors can be installed in the system. However, triggering several detectors at the same time will extend the transmission time of photos to the control panel and to MyJABLOTRON. Complete transmission can take a few minutes.

In order to take a photo using a PG output, use the **F-Link** software and set the **Impulse** parameter in the **PG outputs / Function** menu to a time of at least 1 min. The PIR is limited to taking 1 requested photo by PG status per minute.

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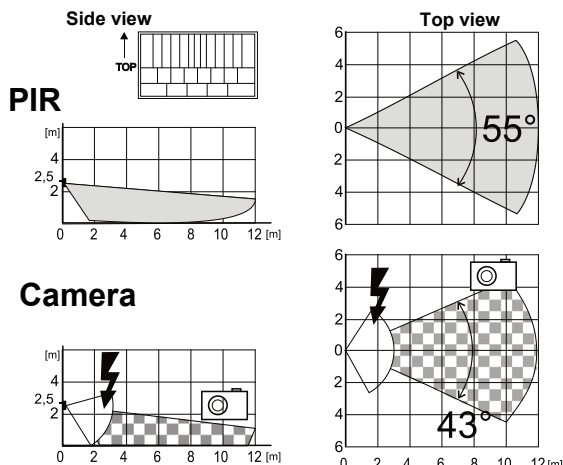
The number of pre-alarm photos taken by a PG output is limited to 40 photos/day/control panel. The photo counter is reset at 00:00 hrs. Alarm photos and photos requested in MyJABLOTRON have no limitation.

In the MyJABLOTRON **Photo gallery / Sending notifications** and in JA-100-Link software all users have access to the photos from all the system sections.

Installation in the corner of a room requires more attention during testing due to possible reflection of flash in the photographed scene (especially in the dark).

Detection characteristics

The standard lens that is supplied with the JA-160PC detector covers an area of $55^\circ / 12\text{ m}$ – see picture. The detection characteristics don't have an influence on the camera part. The lens must not be changed for any other type. The camera always has a viewing angle of 43° , the camera flash has a 3m range.



Saving and browsing the pictures

Every picture is taken as a double exposure: the first with low resolution (LQ = 320×240 pixels), second with high resolution (HQ = 640×480 pixels).

All of the exposures are saved into the independent folders Foto_LQ and Foto_HQ on the micro SD card. When the card is fully loaded, the oldest pictures are replaced by new ones. Pictures saved on the micro SD card can be browsed by a usual PC browser.

Note: Some antivirus software may write their own data on the micro SD card. The detector will automatically format the SD card marked this way. SD card formatting erases all data which has been saved. For more information about formatting see *Formatting the micro SD card*.

Photos are sent to the control panel in LQ. You can browse through the images by **F-Link** and **JA-100-Link** software – **event memory**, click on the event **New image**. Pictures are displayed in LQ, if you click on **Detail** you can get second-exposure pictures (HQ). Images can be searched and browsed by a file manager or picture browser. For another option to show the pictures it is necessary to start **F-Link (JA-100-Link)** software and be logged into the control panel as a service technician or Administrator and then under Disc: *Flexi_log / Foto* photos which have been sent to the control panel (LQ) and photos which have been requested in **Detail** (HQ) are available.

Transfer photos to MyJABLOTRON

When the SIM card supplied by a device manufacturer (*distributor*) is used and the customer uses MyJABLOTRON services, then the customer has direct access to the photos from this service. Parameter settings of the transfer of pictures are done during the panel registration. All the photos are delivered and visible in MyJABLOTRON. Every single photo can be requested in HQ resolution.

There you can also choose telephone numbers (for SMS) or e-mail addresses which will receive a message when a new picture is taken. MyJABLOTRON can request a new picture without PG output activation (see *Installation recommendations, cautions*).

WARNING: This detector allows you to take photos by PG output reaction or from MyJABLOTRON even when the system is unset. The manufacturer strictly warns the user that the detector has to be used within the limits given by particular laws or norms, especially laws about the protection of personal privacy.

The use of the detector is also subject to regulations on the protection of personal data. The manufacturer recommends the users to familiarize themselves with these regulations as well as with the regulations governing the operation of CCTV before the use of the detector. Furthermore, the manufacturer recommends the users to familiarize themselves with General Terms and Conditions of Cloud JABLOTRON and with Privacy Policy (<https://gdpr.jablotron.cz/>).

According to these regulations users have an obligation to ensure the approval of persons in range of the detector during the acquisition of video recordings or the obligation to indicate the image capture area by information tables.

Formatting the micro SD card

The detector is supplied with a formatted micro SD card (12). The yellow indication LED (11) is turned off in normal detector mode. Slow LED flashing indicates that the card was removed while data was being written on it, or it has been changed for another SD card. The detector will work normally with a new SD

card only if the detector performs a card formatting. Formatting is started by pressing the tamper contact (14). The formatting procedure is indicated by quick flashing of the yellow LED indicator (11). During this process all photos on the SD card will be erased, however, a back-up of the photos is in the event memory log.

Changing the batteries

The detector monitors its own batteries and when they are depleted, it will inform you about this with a brief flash of the LED indicator when the detector is triggered. This information is also delivered to the control panel. We recommend changing the batteries within two weeks from the moment the low battery indication starts. After replacing the batteries, the detector needs up to 3 minutes to stabilize (the red LED indicator is lit up). The batteries should be replaced by a service technician with the control panel in Service mode. Always replace both batteries for new ones.

Note: To ensure a proper functionality of the detector we recommend using batteries supplied by Jablotron distributors (BAT-1V5-AA) or other quality branded alkaline (lithium) batteries.

Do not throw the batteries in the trash. Deliver them to a civic amenity site instead.

FW upgrade

In case when the F-Link software does not offer an automatic update proceed by following these steps:

1. Remove at least one battery from the detector.
2. Run the F-Link software. Connect the USB cable from your computer to the mini USB connector (13) inside the detector.
3. Bootloader mode is indicated by lighting of the red LED and flashing of the yellow LED.
4. Then continue the same way as if you want to upgrade the control panel: Control panel → upgrade Firmware → in the window where you are offered a device for upgrading select the USB option and type of device.

Technical specifications

Power	2 Alkaline battery type LR6 (AA) 1.5 V
	Batteries are not included
Typical lifetime of batteries	about 2 years
LowBatt state	2.4 V
Quiescent current consumption	70 μ A
Maximum current consumption	800 mA
Communication frequency	868.1 MHz, JABLOTRON protocol
Maximum radio-frequency power (ERP)	<25 mW
Communication range	approx. 300 m (unrestricted area)
Recommended installation height	2.5 m above the floor
Detection angle / detection coverage:	$55^\circ / 12\text{ m}$ (basic lens)
Horizontal camera capture angle	43°
Range of the flash	max. 3 meters
Resolution of the camera	LQ 320×240 ; HQ 640×480 pixels
Photo size LQ / HQ (typically)	2-10 kB / 2-64 kB (6 kB / 35 kB)
Typical (LQ) photo transmission time to the control panel	up to 20 s (10 s)
Typical (HQ) photo transmission time to the control panel	up to 130 s (60 s)
Typical photo transfer time to the server	15 s / GPRS; 2 s / LAN
Operational environment	Indoor general
Operational temperature range	-10°C to $+40^\circ\text{C}$
Average operational humidity	75% RH, non-condensation
Dimensions	110 x 60 x 55 mm,
Weight (without batteries)	110 g
Classification security grade 2 / environmental class II (according to EN 50131-1)	
Certification body	Trezor Test s.r.o (no. 3025)
Complies with	EN 50131-1, -2, -5, -3, -6
	ETSI EN 300 220-2, EN 50130-4, EN 55032, EN 62368-1, EN IEC 63000
Can be operated according to	ERC/REC 70-03
Recommended screw	2x $\varnothing 3.5 \times 40\text{ mm}$ (countersunk head)



JABLOTRON a.s. hereby declares that the JA-160PC 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 - 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.