JA-120PC (90) PIR motion BUS detector with a 90° verification camera

This device is a bus component of the **JABLOTRON JA-100** 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 640x480 pixels. The camera trigger follows detected movement, which ensures that the cause of the alarm is always recorded. 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 and from the control panel they can be sent to MyJABLOTRON, ARC and a user. The detector can also take a picture by request. The detector should be installed by a trained technician with a valid certificate issued by an authorised distributor.

Installation

The detector can be installed on the wall or in the corner of a room. There should be no objects that can quickly change temperature (e.g. heating appliances) or which move (e.g. curtains hanging above a radiator, robotic vacuum cleaners) or pets in the detector's field of sight. It is not recommended to install the detector opposite windows or in places with 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: 1 – flash for illumination; 2 – camera lens;
3 – PIR detector lens; 4 – cover tab;

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

1. Open the detector cover (by pushing the cover tab (4)). Avoid touching the PIR sensor inside (14) – you could damage it.
2. Take out the PCB – it is held by a tab (9).
3. The recommended detector installation height is 2.5m above the floor.
4. Attach the plastic base to the wall using screws (vertically, with the cover tab facing downwards).
5. Re-insert the PCB and connect the BUS cables to the terminals (11)
6. Plug the connecting cable (6) into the connector on the PCB.

⚠ **Always switch the system power off before connecting the detector to the system BUS.**
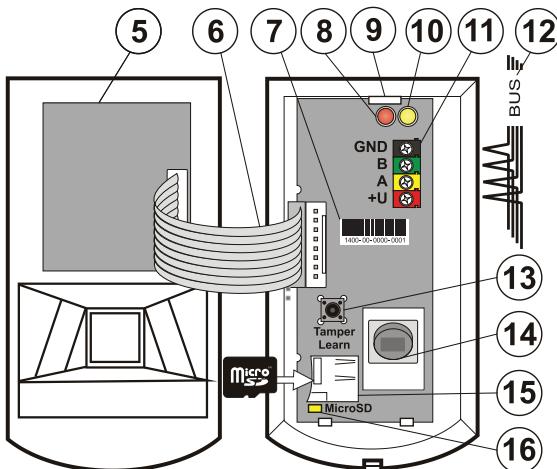
Figure: 5 – Camera module; 6 – connecting cable; 7 – production code; 8 – red LED indicator; 9 – PCB tab; 10 – yellow LED indicator; 11 – BUS terminals; 12 – BUS cable; 13 – tamper contact; 14 – PIR sensor; 15 – Micro SD memory card; 16 – yellow LED Micro SD card indicator

7. Proceed according to the control panel installation manual. Basic procedure:
   a. When the device is switched on, the yellow LED indicator (10) starts flashing repeatedly to indicate that the module has not been enrolled into the system.
   b. Go to the **F-Link** software, select the required position in the **Devices** tab and launch the enrollment mode by clicking on the **Enroll** button.
   c. Press the **Scan/add new BUS devices** button, select the JA-120PC 90° detector and confirm by double clicking on it. The detector will be enrolled and the yellow LED indicator (10) will go off.
   d. If the detector is enrolled as a first camera PIR or a control panel is not connected to an external mass storage, F-Link shows a dialogue window with the question: "Enable image transfer to external storage?" 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, images will be saved in the internal memory of the detector and the control panel. Then it won't be possible to send images to users' cell phones and e-mails.

8. Close the detector cover and test its functionality.

Notes:
- The detector can be also enrolled by pressing the front tamper contact (13).
- Or the detector can be enrolled by entering the serial number (7) in the F-Link software (or using 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 supplied screw.

Detector internal settings

Settings can be made using **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):

LED movement indication: Disables/*Enables movement indication with the red LED (8) during operation. Always indicates service mode.

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.

LQ photo quality: Standard* quality uses optimized compression in order to achieve the fastest possible transfer to the ARC or to the end user in MyJABLOTRON. The goal is achieving alarm verification in the fastest time possible. If the quality is switched to *Extended,* the system will use lower image compression which will at least double the time necessary to transfer the image (depends on the conditions of the captured scene). Change the quality only if the LQ image does not have the quality required by the customer – it may depend on the captured space. It is not recommended when there are more verification detectors in the premises which may take images at the same time.

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.

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

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. When this parameter is enabled the detector will send photos even when the detector is configured with repeated or confirmed reaction and the alarm has not been confirmed. 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 or external mass storage. If the system is unset (alarm is triggered), the images taken during the entrance delay will be sent automatically regardless of this option.

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 640x480 px resolution. Photos are sent to the external mass storage (provided that transferring is enabled).

⚠ **To set the JA-120PC (90) detector to comply with security grade 2 or other requirements use F-Link SW, Parameters tab and the option "System profiles".**

Camera and basic reactions

The process of how the camera takes pictures depends on the settings in the **F-Link software** – under the **Devices** tab. Choose a type of **Reaction** on the detector's position.

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, takes 2 photos maximum. Photos are sent to the control panel (6 photos maximum).

Delayed: The first activation (entrance delay) takes up to 2 photos depending on the detected movement and saves them into the internal memory (Send pre-alarm image disabled). When alarm is triggered, photos are sent from the internal memory to the control panel. Then the behaviour is the same as with an instant reaction (8 photos maximum).

Warning: When the Device autobypass/3rd alarm is enabled (located in **Settings/Parameters**) 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 may be tripled (18/24 photos). Applies to Instant/Delayed reactions.

Installation recommendations, cautions

Several JA-120PC (90)s 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 the external storage. Complete transmission can take a few minutes.

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

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.

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.

When you start transferring the pictures to MyJABLOTRON or external mass storage, it's necessary to take into account the cost of data transfer to be paid to your GSM provider When LAN communication is not available.

Detection characteristics

The PIR detector has a 90°/12m coverage – see the picture below. The detection characteristics of the PIR part has no influence on the camera part of the detector.

Warning:
- The lens cannot be changed for other types.
- The camera has a viewing angle of 90°, the camera flash has a range of 3 m.

Side wiew

Top view
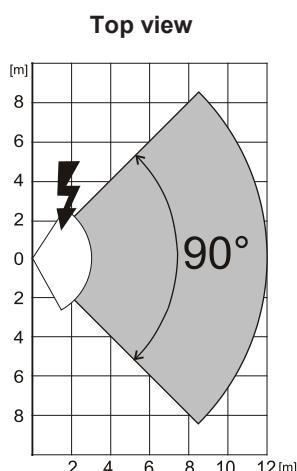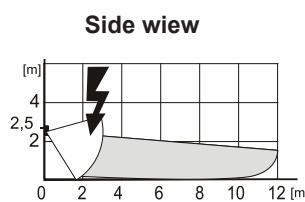
Saving and browsing the photos

Every photo is saved twice: the first in low resolution (LQ = 320x240 pixels), the second in high resolution (HQ = 640x480 pixels).

All of the exposures are saved into independent folders Foto_LQ and Foto_HQ on the Micro SD card. When the card's capacity is full, the oldest photos will be replaced with new ones. Photos saved on the micro SD card can be browsed in a photo browser on a PC.

Note: Some antivirus software may write its own data on the Micro SD card. The detector will automatically format an 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 these images in **F-Link** and **J-Link** software, **event memory** by clicking on an event called *New image*. Pictures are displayed in LQ, if you click on *Detail* you can get second-exposure photos (HQ). Images can be searched and browsed by a file manager or picture browser. In order to display the photos this way it is necessary to start **F-Link (J-link)** software, be logged into the control panel as a service technician or Administrator and then load the control panel memory. *Disc: Flexi_log /Foto.* Here are all the photos which have been sent to the control panel (LQ) and photos which have been requested in *Detail* (HQ).

Picture transmission from the control panel

It's necessary to choose one of these options in order to send photos to the user:

Transfer of pictures to MyJABLOTRON

When 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*).

MyJABLOTRON respects permissions of individual users concerning photo verification accordingly to sections to which the users have access (for example, a user from section 1 cannot browse through photos from section 2)

Transfer of pictures to external mass storage

If MyJABLOTRON is not available, photos can be transferred to external mass storage http://img.jablotron.com. Communication parameters are preset in the factory and are activated when the first PIR detector with a camera is enrolled in the system and after agreeing with pictures transfer.

When communication works properly the user must create an account at http://img.jablotron.com by entering the login and password, and then filling in the registration code of the control panel which will make photos available for browsing. The registration code is on the control panel PCB or you can read it via **F-Link** software, **Communication** tab, **Registration code** field.

Reports of new photos stored in this mass storage can be sent to an e-mail.

Note: If there are more detectors in the premises, all photos will be visible to all people with access to the created premises regardless of the sections assigned to them.

Photos stored at http://img.jablotron.com are available only in LQ quality. Photos in HQ quality cannot be requested.

In both cases sending reports straight from the control panel will normally work. When the picture is saved in MyJABLOTRON or http://img.jablotron.com, the control panel will send an SMS report to all users depending on the settings in **F-Link**, **User reports** tab, **Alarm photo** settings. Sent SMSes include an http link to display the photo. The photos can also be browsed on mobile phones with a connection to the internet.

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 and the manufacturer recommends that users be aware of the obligations applicable to the operation of CCTV.
- 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 (15). The yellow indication LED (16) 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 the SD card is started by pressing the tamper contact (13). The formatting procedure is indicated by quick flashing of the yellow LED indicator (16). During this process all photos on the SD card will be erased, however a backup of the photos is in the event memory log, alternatively in external storage.

Technical specifications

Power	from the control panel BUS +12 V (+9 ... +15 V)
Current consumption	
- nominal for the backup supply calculation	5 mA
- maximum for cable choice	250 mA (with high flash intensity)
Recommended installation height	2.5 m above the floor
PIR detection angle / detection coverage:	90°/12 m
Horizontal camera capture angle	90°
Range of the flash	max. 3 meters
Camera resolution	LQ 320x240; HQ 640x480 pixels
Photo size LQ/HQ (typically)	2-20kB / 2-64kB (6kB / 35kB)
Typical (LQ) photo transmission time to the control panel	up to 20 s. (10 s)
Ideal (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
Dimensions, weight	110 x 60 x 55 mm, 102 g
Classification	Security grade 2 / Environmental class II
- according to	EN 50131-1, EN 50131-2-2
- operational temperature range	-10 to +40 °C
- operational environment	indoor general
- certification body	Trezor Test s.r.o. (no. 3025)
Also complies with	EN 50130-4, EN 55022

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JABLOTRON ALARMS a.s. hereby declares that the JA-120PC (90) is in a compliance with the relevant Union harmonisation legislation: Directives No: 2014/30/EU, 2011/65/EU. The original of the conformity assessment can be found at www.jablotron.com - Section Downloads.

Note: Although this product does not contain any harmful materials we suggest you return the product to the dealer or directly to the manufacturer after use.