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

The JA-160PC is wireless component of the **JABLOTRON 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 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 an external mass storage area, ARC and a user. The detector can also take a photo on command if it is required (e.g. fire alarm confirmation). The detector should be installed by a trained technician with a valid certificate issued by an authorised distributor.

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 (electric heaters, gas appliances, etc.) or which move (e.g. curtains hanging above a radiator) or pets in the detector´s field of sight. It is not recommended to install the detector opposite to windows or floodlights 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.

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

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).
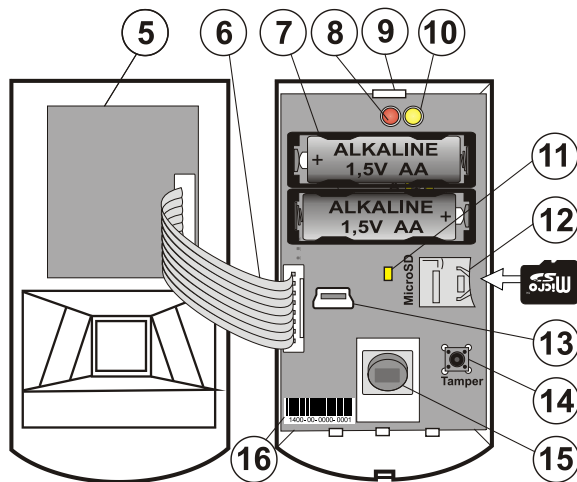5. Return the PCB.

Figure: 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. Leave the battery disconnected and the cover open and then follow the control panel installation manual. The basics of enrollment are:
   a. There must be a JA-110R 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 enrollment mode by clicking on the **Enroll** option.
   c. Insert the batteries (mind the correct polarity). When the second battery has been inserted into the detector, an enrollment 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. If the detector is enrolled as the first PIR camera or the control panel is not connected to an external mass storage area, F-link shows a dialogue window with the question: "Enable image transfer to the IMG server?" We strictly 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 users' cell phones and e-mails.

7. Close the detector cover and check its functions. When the detector has been closed, it starts the 15 minute test mode when every detected movement is indicated by the red LED and sent to the control panel.

Notes:

If you want to enroll the detector to the control panel when the battery has already been inserted, remove the battery first and then press the tamper contact (14) a few times (for discharging the rest of the energy) and then enroll the detector.

The detector can also be enrolled to the system by entering its production code (16) in the F-link software (or using a bar code scanner). All numbers stated under the bar code shall be entered (1400-00-0000-0001).

Detector internal settings

The detector properties can be set by **F-Link** software (version 1.1.1 and higher) – **Devices** tab. When at the detector position, use the *Internal settings* option 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: select the PG outputs, by whose activation a photo is taken (* No, camera does not react to PG). For further info see Installation recommendations, cautions

Taking picture after PG activation*: No flash, *With flash*
Photo taking during entrance delays: *No flash, With flash*
Photo taking during alarms: *No flash, *With flash*

Send pre-alarm image: When this parameter is enabled the detector will send photos from a set section when an alarm has not been triggered yet (for example: during an entrance delay).

Test: takes a test picture with a flash and F-link shows it. When the **Detail** button is pressed, F-Link shows the picture with a 640 x 480 pix resolution. Pictures are sent to the external mass storage area (if it 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 one setting period the camera can be triggered 4 x (then it is auto-bypassed). For every detected movement it takes 2 photos maximum. Photos are sent to the control panel (8 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. (10 photos maximum).

Caution: When in **Settings/Parameters** "Bypass after 3 x triggering" is enabled, then taking photos is blocked after the 3rd repetition. The number of taken and transferred photos could be 3 times bigger (max. 3 x 4 activations during one setting period).

Detection characteristics

The standard lens that is supplied with the JA-160PC detector covers an area of 55°/12m – 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 3 m range.

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Side view

Top view

PIR

Camera
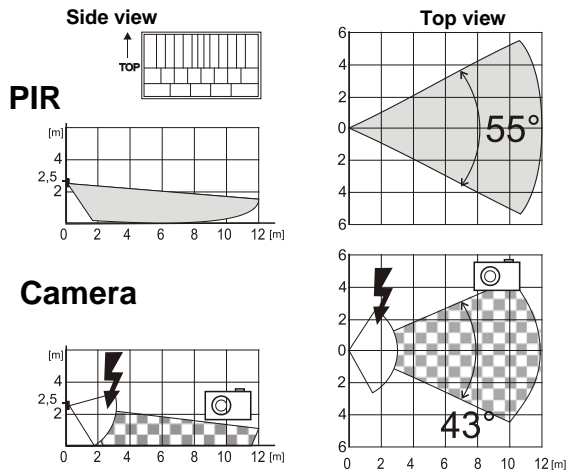
Saving and browsing the pictures

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

All of the exposures are saved in the internal memory (micro SD on the detector PCB) into the independent folders Foto_LQ and Foto_HQ. 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. <u>Note:</u> Some antivirus software writes checking data on the micro SD card. After reinserting the SD card into the detectors, due to the unknown file (the checking data) card formatting will be performed. The SD card formatting erases all data which has been saved. For more information about formatting see Formatting the micro SDcard.

Photos are sent to the control panel in LQ. You can browse through the images by *F-Link* and *J-Link* software (In the 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 (J-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.

Picture transmission from the control panel

Choose one of these options to send pictures to the user:

Transfer photos to the Jablotron Web Self Service (WSS)

When the customer uses WSS services, then access to the photos is automatically allowed. Settings of the control panel for the transfer of pictures are done when the panel is registered. All the photos are saved and visible in the WSS. Every single photo can be requested in HQ resolution. The WSS has an option to fill in telephone numbers for sending the links of the pictures via SMS or e-mails to get the photos when they are taken. Using the WSS it is possible to request a new picture without PG output activation (see Installation recommendations, cautions*).*

Transferring pictures to external mass storage

If the WSS is not available, photos can be transferred to external mass storage for example: http://img.jablotron.com. Communication parameters are preset on the factory and they are activated when the first PIR detector with a camera is enrolled to the system. First create an account at http//:img.jablotron.com. Enter your login and password, then fill in the registration code of the control panel and the photos will be immediately accessible 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. From this mass storage area a report of new pictures can be sent as an e-mail.

When the picture is saved on the WSS or http://img.jablotron.com, the control panel sends an SMS report to all selected users according to the *F-link* software, **User reports** tab, **Alarm photo** settings. Sent SMSes include an http link for displaying the photo, which on cell phones with an internet connection, can be displayed directly.

CAUTION: Because this detector allows you to take photos when the system is unset by a PG state or from the WSS, the producer strictly warns the user that the detector has to be used within the limits given by particular laws or norms, especially norms 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 should 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 photos or the obligation to indicate the image capture area by the information tables.

Formatting the micro SDcard

The detector is supplied with a formatted Micro SD card (12). The indication LED (11) is turned off in normal detector mode. Slow LED flashing indicates that some recording has been done on the SD card, or the SD card has been changed. The detector works normally with a new SD card only if the detector performs a card format. Formating the SD card is done after pressing the tamper contact (14). The formatting procedure is indicated by quick flashing of the LED (11). During this process all photos on the SD card are erased.

Installation recommendations, cautions

- Several JA-160PCs can be installed in the system. When several detectors are triggered at the same time, the transmission time to the control panel and outward is extended. A whole transmission can take a few minutes.
- For taking photos by PG status set *PG outputs / Function* Impulse to a time of 1 min. minimum via *F-Link* software. The PIR has an internal algorithm which limits taking a photo by PG status to 1 photo per minute.
- The number of pre-alarm photos taken by a PG output is limited to 40 photos per day. The photo counter is reset at 00:00 hrs. Alarm photos and photos via the WSS have no limitation.
- In the WSS **Photo gallery / Sending notifications** and in http://img.jablotron.com **Premises / Share** and during maintenance mode by J-Link software all users have access to the photos from all the system sections.
- Before you start using the WSS or external mass storage area check the cost for GPRS transfers with your GSM provider.

FW upgrade

1. Remove the batteries from the detector.
2. Connect the mini USB cable to the connector (13) and then put back the batteries.
3. Bootloader mode is indicated by the red LED lighting and by short flashing of the yellow LED.
4. Then continue the same way as if you want to upgrade the control panel: Control panel → upgrade Firmware → choose the FW pack file → in the window where you are offered a device for upgrading select the USB option and type of device.

Technical specifications

Power	2 AA (LR6) 1.5V 2400 mAh alkaline batteries
Typical lifetime	about 2 years (1 activation takes 1 series of photos a day)
Recommended installation height	2.5 m above the floor
Detection angle / detection coverage:	55° / 12 m (basic lens)
Horizontal camera capture angle	43°
Range of the flash	max. 3 meters
Resolution of the camera	LQ 320 x 240; HQ 640 x 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 (ideally)	up to 20 sec. (10 sec.)
Typical (HQ) photo transmission time from the control panel (ideally)	up to 130 sec. (60 sec.)
Typical photo transfer time from the system to the server	15 s/GPRS; 2 s /LAN
Operational environment according to EN 50131-1	II. Indoor general
Operational temperature range	-10 to +40 °C
Dimensions, weight	110 x 60 x 55 mm, 102 g
Classification	Grade 2
According to	EN 50131-1, EN 50131-2-2
Also complies with	ETSI EN 300 220, EN 50130-4, EN 55022, EN 60950-1

Can be operated according to ERC REC 70-03

C E JABLOTRON ALARMS a.s. hereby declares that the JA-160PC is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. 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