The JA-110C BUS photo verification camera

The JA-110C serves for taking one static picture of protected premises and transfer to the **JABLOTRON** control panel. The camera can take a photo on command if it is required (by activation of a PG output by SMS or dialling in, a requirement from the MyJABLOTRON app or by activation of any detector – again via a PG output). This setting can be extended by the optional photo buffering function. It splits taking the photos into pre-photos when the camera regularly takes photos at a pre-defined frequency and saves them to its buffer and also into post-photos when it takes the required number of photos after activation.

The camera has built-in IR illumination for taking pictures in bad light conditions and also a lighting intensity detector which can switch ON any PG output (For instance to turn the external lighting on).

The camera also has a built-in tilt detector which protects against unwanted manipulation. It occupies one position in the system.

The camera should be installed by a trained technician with a valid certificate issued by an authorised distributor.

Installation

The camera can be installed outdoors or indoors. Although the camera has a basic level of protection against water for outdoor installation we recommend using additional cover because of rain and snow protection. If the front glass is included in the additional cover then IR illumination has to be disabled. An external IR illuminator can be used for the illumination of the monitored area and can also be switched on by the function "External device triggering". For simple setting of the monitored area the camera is equipped with a jointed holder (1).
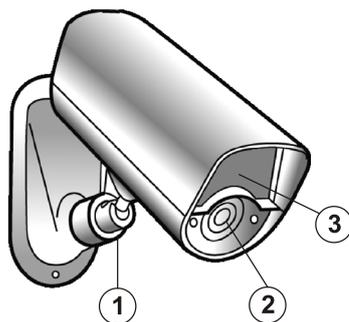
Figure 1: 1 – Adjustable joint; 2 – camera lens;
3 – Indication LEDs and IR illumination

1. Open the lower camera cover (by releasing 2 screws).
2. The camera's jointed holder includes two parts which split the adjustable joint (1). Disassemble the holder by unscrewing to get to its two parts (1).
3. Install the lower part of the holder onto the required place using two screws.
4. On the rear part of the camera release the bushing (4) and put the BUS cable through the camera.
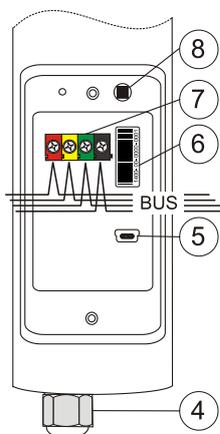5. Connect the BUS cable to the BUS terminals (7).

Figure 2: 4 – gland for cables; 5 – mini USB;
6 – production code; 7 – BUS terminals;
8 – tamper contact

⚠️ **When connecting the detector to the system BUS, always switch the power off.**

6. Proceed according to the control panel installation manual. Enrolling the camera to the system and setting all parameters can only be performed in Service mode.
   Basic procedure:
   a. When the system has been turned on then the yellow LED (3) flashes and it indicates the camera has not been enrolled to the system yet.
   b. Using **F-Link** software, select the required position in the **Devices** window and launch enrolment mode by clicking on the **Enroll** option.
   c. Press the LEARN/TAMPER (8) button in the camera – the camera is thus enrolled to the system on the required position and the yellow LED indicator goes off.
7. Close the camera's rear cover part first and then its front part – confirm hearing the tamper contact clicking (when the cover is closed from the side it could cause the tamper contact to be switched on incorrectly (it slides down from the plastic edge) and in the Diagnostic tab the activated tamper contact of the camera is visible.

Notes:

When the camera is placed out of protected area, for example in outdoor environment, we strictly recommend using the JA-110T BUS isolator and put it to BUS leg. This leg will protect the BUS against unwanted manipulation (tampering).

The camera is not equipped with an IR filter to get the best picture quality at night which is why pictures taken during the day could be violet coloured.

The module can also be enrolled to the system by entering its production code (6) 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) or by option "Scan/Add new BUS devices".

If the camera is enrolled as a first camera or a control panel is not connected to an external mass storage area (http://img.jablotron.cz), F-Link shows a dialogue window with a 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.

Caution: If the transmission is not enabled, photos will be saved in the internal memory of the camera and the control panel. Then it is impossible to send them to users´ cell phones and e-mails.

Setting the camera properties

The camera properties can be set by **F-Link** software (version 1.2.3 and higher) – **Devices** tab. When at the camera position, use the **Internal settings** option to open a dialog window where the following settings can be configured (***** default settings):

Activation PG for one photo: (*No) The function primarily serves to take one photo when a selected PG (PGs) is triggered. The camera takes this photo in LQ and HQ, but only LQ is sent. The HQ photo is temporarily stored in the camera memory and sent when it is requested via the MyJABLOTRON app or F-Link.

Note: The camera has a buffer for approximately 100 photos and it is also the limitation for photos requested by the activation of a PG output to 3 photos in 10 minutes.

Transferred to ARC as an alarm photo: (*Disabled) This option determines if the captured photo will be taken as an alarm photo and sent to the ARC.

Note: This option is visible if at least one activation PG is selected.

LED flashes every 30 s: (*Disabled)

By enabling this option the camera flashes every 30 s and then always when a photo is taken. For outdoor detectors, sirens or any other verification devices it is good to indicate they are active by regular warning flashes of the LED (they can be taken as pre-detectors to detect any potential intrusion).

Photo buffering: (*Disabled) Activation of this option enables the function of storing photos in the camera's buffer memory using the set interval. If the memory is full, the oldest photos are deleted. By subsequently setting "Photos before activation" and "Photos after activation" of the selected PG you can store and send photos that can show what happened before or after the entire PG activation.

Note: When setting the photo buffering function you should consider the number of photos sent from the system (mentioned in the control panel installation manual), especially if more cameras are installed in the system.

Transferred to ARC as an alarm photos: (*Disabled) This option determines if the captured photos will be taken as alarm photos and whether sent to the ARC.

Note: This option is visible when the parameter "Photo buffering" is enabled.

Taking a series of photos when PG triggered: (*No). This function is primarily used to send a series of photos when a selected PG (or PGs) is triggered. The number of saved photos before and after triggering of the selected photos results from the subsequent setting. An activation photo for Photo buffering is taken in LQ.

Photo interval (1-15 s.): (*5 s) It is used to set the frequency of photos in a series. The optimum setting depends on the particular installation situation. For instance: if the intruder is expected to come from the side or if the field of view of the camera or the surrounding space is limited, a shorter time should be set. The disadvantage is that the saved photos in the camera are overwritten more quickly. If the camera covers a larger area and if the intruder is expected to move towards the camera, a longer time should be set.

Note: We recommend you to test the camera setting in each situation in the real environment (simulate the intruder). This is the only way to get the product's optimal setting.

Pre-PG activation photos: (*Enabled) Disabling the option prevents the saving and subsequent sending of photos taken before the triggering of the selected PG (or PGs). Photos taken before activation of a PG are only saved in LQ.

Post-PG activation photos: (*Enabled) Disabling this option prevents the saving and subsequent sending of photos taken after activation of the selected PG (or PGs). Photos taken after PG activation are saved in LQ and HQ.

Number of taken photos (1-15 photos): (*1) This option serves for setting the number of photos that are to be saved before/after triggering of the selected PG. The total sum of saved photos may be max 15 + 1 activation (initiated by PG triggering). These 15 photos may include photos before and after activation of the PG in accordance with the customer´s requirements or particular installation situation.

Number of sent photos (1-5 photos): (*1) This option serves for setting the number of photos that are sent to the control panel and then through an SMS or directly to the MyJABLOTRON portal. Always at least one photo before the activation, the photo initiated by PG activation and a photo after activation are sent.

Note: A photo taken by a PG output activation is sent as the first one, photos taken before an activation are sent subsequently and photos after the activation sent last. In the MyJABLOTRON app photos are displayed in the order they were taken.

Tampering detector (tilt detector): (*Enabled) This option can disable the reporting of a tamper alarm to the control panel in the case of tampering with the camera (it does not have any influence on the tamper contact on the camera cover). It can be used for problematic windy locations to eliminate false alarms. However, by disabling the parameter you risk the camera being turned to another direction without it being reported to the system. In such a case we recommend you to enable the parameter "Tamper-activated photos".

Tamper-activated photos: (*Enabled) This option can disable taking and sending photos in the case of camera tampering. When "*Photo buffering*" is disabled and the tilt detector is activated, the camera takes 3 photos with a 5 s pause between them. When that parameter is enabled the camera takes and sends photos according to the pre-set mode (respects its settings fully – number of taken photos, time interval, etc.).

Note: Sometimes it could happen that photos will be taken at the same time (duplication). This is determined by the camera's internal algorithm.

IR supplementary illumination: (*Auto) The automatic function of illumination by IR LED diodes of the camera is set in such a way that if the ambient illumination drops below a certain level (dusk/sunset), the illumination is automatically enabled. As soon as the ambient illumination level increases (sunrise), the illumination is disabled. If the function "Pre-PG-Activation photos" is "OFF", the IR illumination is only activated on triggering of the PG and for photos taken after the PG triggering. If "Always" is selected, IR illumination will be permanently on. IR illumination can also be completely disabled (we recommend it when camera is place in an outdoor housing).

Higher IR illumination level: (*Disabled) This option allows you to increase the IR LED diode lighting intensity level.

Warning: the increase of the intensity level will cause a higher consumption from the BUS (by up to 150 mA – 250 mA), you should check the total consumption from the BUS to maintain the backup of the system.

External device triggering: (*Disabled) When the option is enabled the camera can use its internal illumination detector to trigger the PG. Select the PG output in the camera internal settings in the Devices tab. By moving the value between 0 (dark) and 10 (light) on the scale you determine under what illumination conditions the PG is to be activated. To set the correct level for particular illumination you can use the PG activation indicator located next to the scale. When PG is ON the indicator goes red and when the PG is OFF the indicator goes green.

Note: The controlled PG must have the "Copy" function (can be set in the PG outputs tab).

Test: It takes a one test photo in LQ and shows it in F-Link. Then when you click on the Detail button photos are displayed in HQ. Photos are simultaneously sent to the external mass storage area (if transfers are enabled).

Saving and browsing the pictures

Some photos (activation photos which are not in Photo buffering mode and photos taken when after PG has been triggered in Photo buffering mode) are taken as a double exposure: the first with low resolution (LQ=320x240 pixels), second with high resolution (HQ=640x480 pixels).

All exposures are saved in the internal memory (built-in SD card) into the independent folders Foto_LQ and Foto_HQ. When the card is fully loaded, the oldest photos are replaced by new ones. Photos saved on the SD card can be browsed by a normal PC browser when the camera is connected via a USB cable.

Photos are sent to the control panel in LQ. You can browse through the images by **F-Link** and **JA-100-Link** software (in the **Event memory**, click on event *New image*). Pictures are displayed in LQ, if you click on *Detail* you can get pictures of the second exposure HQ (if existing). 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 are available which have been sent to the control panel (LQ) and photos which have been requested in *Detail* (HQ).

Note: Some antivirus software writes checking data on the micro SD card. The camera notices unknown files (the checking data) so formatting the SD card will be performed. SD card formatting erases all data which has been saved on the SD card.

Picture transmission from the control panel to the MyJABLOTRON

If there is a SIM card supplied by the distributor and if the user uses MyJABLOTRON services, then access to photos is automatically allowed. Settings of the control panel for transferring pictures are done when the panel is registered. All the photos are saved and visible in the MyJABLOTRON application. The MyJABLOTRON application has an option to fill in telephone numbers (for SMSes) or e-mails to get the photos when they are taken (Notification). Using MyJABLOTRON it is also possible to request a new picture without PG output activation (see Installation recommendations).

*Note: If the user doesn´t use or want to use the MyJABLOTRON application, sending pictures straight from the control panel will work normally. The control panel sends an SMS report to all selected users according to the **F-Link** software, **Users 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 camera allows you to take photos when the system is unset by a PG state or from MyJABLOTRON, the producer strictly warns the user that the camera 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 camera is also subject to regulations on the protection of personal data and the producer recommends that users should be aware of the obligations applicable to the operation of CCTV.

According to these regulations MyJABLOTRON users have an obligation to ensure the approval of persons in the range of the camera during the acquisition of photos or the obligation to indicate the image capture area by information signs.

Installation recommendations

− Several JA-110C cameras can be installed in the system. When several cameras 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. It is also necessary to pay attention to the current peak from the control panel when requesting the new photo by triggering more cameras with an external IR illumination (all at the same time).

− For taking photos by PG status set **PG outputs / Function** Impulse to a time of at least 15 sec. via F-Link software. The camera has an internal algorithm which limits taking the photos by PG status to 3 photos per 10 minutes.

− The camera has no internal counter of photos taken in a day. The only limitation to the number of photos taken by a PG output is a limit of 3 photos per 10 minutes.

− Before you start using the MyJABLOTRON application or external mass storage area check the cost of GPRS transfers with your GSM provider.

− If several PG outputs have been triggered at the same time or getting buffered photos is being performed, the camera uses already taken pictures so they could be duplicated.
The MyJablotron application copies these photos subsequently to the correct events (switched PG outputs).
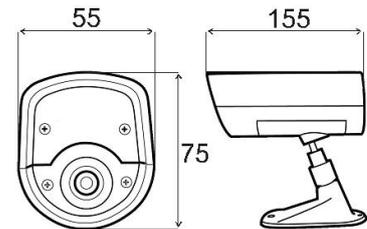
Technical specifications

Power	from the control panel BUS +12 V (+9 ... +15 V)
Current consumption in standby mode	15 mA
Current consumption for cable choice (IR higher intensity)	250 mA
IR illumination angle	70°
Horizontal camera capture angle	75°
Range of IR illumination	max. 12 m
Resolution of the camera	LQ 320*240; HQ 640*480 pixels
Average photo file size LQ/HQ (typically)	6 kB/35 kB
Typical (LQ) photo transmission time to the control panel	up to 20 sec. (10 sec.)
Typical (LQ) photo transfer time from the system to server	15 s/GPRS; 2 s/LAN
Operational environment according to EN 50131-1	IV. Outdoor general
Operational temperature range	-20 to +60 °C, humidity max. 75%
IP cover	IP65
Dimensions, weight	155 x 75 x 55 mm, 235 g
Classification	Grade 2
According to	EN 50131-1, EN 50131-3
Also complies with	EN 50130-4, EN 55022

JABLOTRON ALARMS a.s. hereby declares that the JA-110C 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: 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.