JA-112R Bus interface for JA-100 wireless components

*The product is a bus component of the **JABLOTRON** system. It is used to communicate with wireless devices in the system. It is supplied in the form of a printed circuit board, which can be used in two ways – by placing it directly into the holder in the control panel or into the PLV-JA111R box designed for installation outside the control panel within the range of the bus. To extend radio signal coverage, up to three such modules can be used per installation. The product is intended for installation by a trained technician with a valid Jablotron certificate.*

The product is compatible with JA-103K, JA-107K, and JA-102K control panels.

Installation

The appropriate location of the bus module for wireless connection of components (hereinafter referred to as the radio module) must be selected regarding the required range. In installations of normal size (family house), it is sufficient to place the module directly in the control panel. However, the radio range is negatively affected by other transmitters, electrical wiring or metal objects. For larger installations and greater distances, it is recommended to install the module outside the control panel in the PLV-JA111R, at least 2 metres away from the mentioned negative influences. For large installations (e.g. multi-storey apartment buildings), up to three radio modules can be installed in the system. These can be connected anywhere on the system bus, but it is recommended to maintain a minimum distance of 10 m (open space) between them, or across one wall or floor in a built-up area. If there are multiple radio modules in the system, wireless devices automatically log in to the module that transmits the event from the peripheral to the control panel first, regardless of signal quality. If the connection to the module in question is lost, the peripheral automatically switches to another module, if available.

It is always necessary to check the signal strength in the ***Diagnostics*** tab in the ***F-Link*** software after completing the installation in a given building. The signal strength for wireless devices must not be less than 20% (the signal level may fluctuate depending on external influences and other radio traffic in the building). In such a case, it is necessary to find a more suitable location for the radio module or to add another radio module to the installation.

Installation of the radio module in the control panel (A)

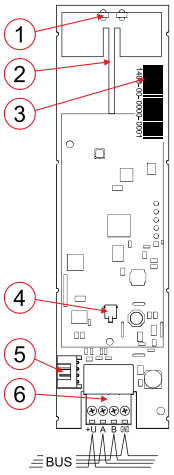


Fig. 1: Description of individual parts of the product

***1** – LED, **2** – antenna, **3** – serial number, **4** – tamper (switching part), **5** – connecting cable connector, **6** – terminal block, **7** – upper holder latches, **8** – lower holder latches, **9** – radio module holder*

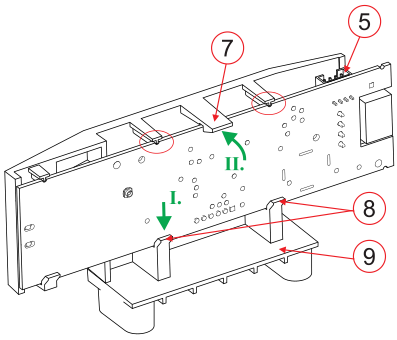


Fig. 2: Placing the product in the holder in the control panel

The radio module can be placed in the holder directly in the control panel. The connection to the control panel is made using a flat cable supplied with the control panel (always in the required length according to the type of control panel).

The bus connector on the control panel electronics is designed exclusively for connecting one radio module placed in the control panel holder.

1. First, insert the radio module electronics (orientation as shown in Figure 2) into the holder (9) in the direction I, at the angle given by the lower latches (8). Make sure that the electronics of the radio module with its semi-circular cut-outs in the printed circuit board are seated on the semi-circular lower protrusions. This is very important, as the next step is to secure the radio under the upper latches (7) in the direction of II, when the tamper contact (4) located on the upper side of the module must be closed.
2. Connect the connecting cable (supplied with the control panel) to the radio module connector (2) and then to the control panel connector (see the control panel installation instructions).
3. Then follow the procedure described in the section Teaching the module to the control panel in this manual.

In case of an installation into the control panel it is necessary to check the tamper contact status in the Diagnostics tab in the F-Link software (after enrolling the radio module into the system). If the tamper contact is active check the positioning of the electronic in the holder.

Installation of the radio module outside the control panel (B)

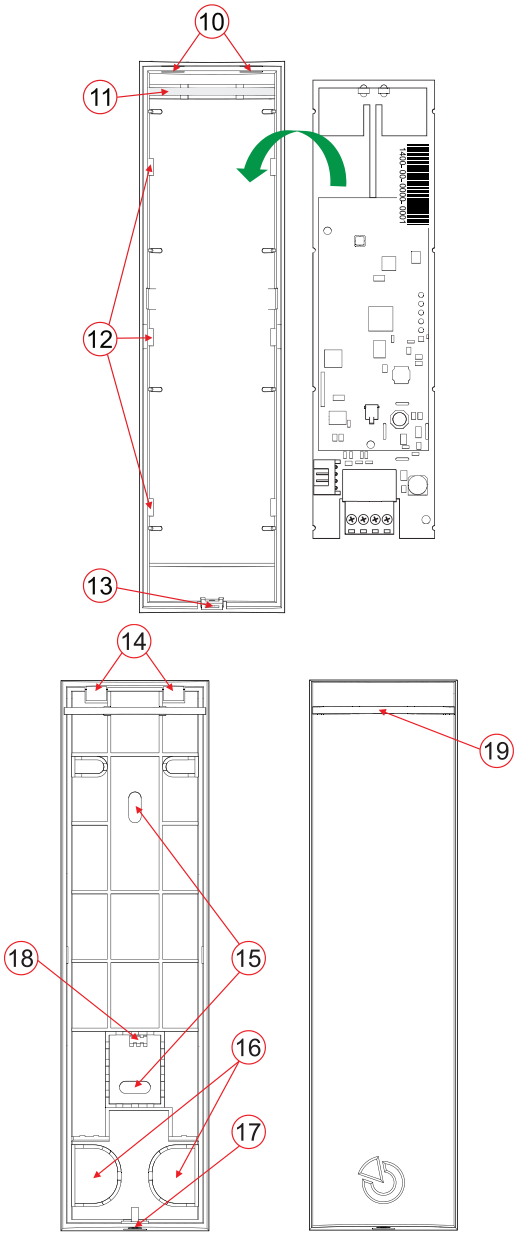


Fig. 3: Open PLV-JA111R box, placement of the radio module in the box, view of the closed box

***10** – upper openings for PLV-JA111R latches, **11** – light guide inner part, **12** – guide groove for attaching the radio module, **13** – lower latch of the upper cover, **14** – upper latches of the lower cover, **15** – holes for fastening screws, **16** – break-out holes for bus cable, **17** – hole for lower latch and hole for locking screw, **18** – tamper (pressure part), **19** – light guide – visible part*

The radio module board can be placed outside the control panel within the range of the bus, directly in the PLV-JA111R plastic cover. The plastic cover includes a mounting kit with a marked bus terminal block. When removing the radio module from the control panel holder, disconnect the connection cable from the connector (5), then release the upper latches (7) and slide the module out of the holder.

1. Open the PLV-JA111R box by pressing the latch on the lower part (13) and tilting the upper part outwards.
2. Insert the radio module into the inside of the upper part (orientation – light guide at the top, terminal block at the bottom). We recommend holding the module by the fitted part of the terminal (with the module components facing upwards).
3. First, insert the left side of the module at a slight angle under the guide grooves on the left side, and then fold down the other side under the guide grooves on the right side of the plastic part. The correct position of the radio module in the plastic part is defined by the semi-circular cut-outs on the module's electronics and the guide grooves on the inside of the plastic part's cover. To seat it properly in the plastic part, it is necessary to use slight force, pressing down on the serial number label (3).
4. Break out a suitable hole (16) in the lower part of the bottom part and pull the bus cable through.
5. Screw the lower part of the cover onto the mounting surface, including the tamper detection tear-off segment.

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6. Shorten the bus cable to a suitable length and remove the top insulation (for better placement of the wires in the cover).
7. Connect the bus cable to the marked terminal from the PLV-JA111R package.

Always connect the bus when the system power is completely turned off.

8. Insert the connected terminal into the counterpart terminal block (6) on the radio module (orientation determined by the terminal block locks).
9. Close the module cover and secure it with the locking screw from the package. The bus wires must be located only in the area separated by the partition.

Module enrolment into the system

Follow the control panel installation manual. Basic procedure:

a. When the system is switched on, the yellow LED on the radio module starts flashing repeatedly to indicate that the module has not yet been enrolled into the system.
b. Go to the ***F-Link*** software, select the required position in the ***Devices*** tab and launch the ***Enrolment mode*** by clicking on the ***Enrol*** option.
c. Click on ***Scan/add new bus devices***, select the radio module and by a double press confirm enrolling – the yellow LED goes off.

Notes:

– *The module can also be taught to the control panel by entering the serial number using the F-Link programme. The serial number is on the barcode label located on the module (3). Enter all digits (serial number format: 1400-00-0000-0001).*
– *To remove the module from the system, delete it from the position in the control panel.*
– *For more detailed information on installing multiple radio modules in the system, as well as information on checking the RF signal in the F-Link software, refer to the control panel installation manual.*

To set the radio module to comply with the Grade 2 classification, use the System profiles function in the Parameters tab in the F-Link software (the Default profile does not meet the Grade 2 classification); for more information see the JA-10xK control panel installation manual.

Setting the radio module properties

The module properties can be set in the ***Devices*** tab in the ***F-Link*** software. At the module position, click on the ***Internal settings*** option to open a dialogue window where you can set the following parameter:

LED indication during communication: the factory setting is that the radio module indicates communication with wireless devices with a red LED during operation. This indication can be turned off.

Interference detection: this is disabled by default. However, it can be set to two levels – ***low*** (interference lasts longer than 30 seconds within one minute) and ***high*** (interference lasts longer than 10 seconds within 20 seconds). If detection is enabled and interference occurs in the communication band, the system reports a fault or sabotage.

Learning signal: using this option will cause the control panel to transmit a learning signal (intended for wireless devices that only contain a receiver, e.g. JA-150N).

Technical parameters

Power supply	*from the control panel bus 12 V DC (8-15 V)*
Quiescent current consumption	*30 mA*
Maximum current consumption	*80 mA*
Communication band	*868.1 MHz, JABLOTRON protocol*
Maximum radio frequency power (ERP)	*<25 mW*
Communication range (line of sight)	*500 m*
Dimensions	*132 x 35 x 8 mm*
Weight (electronics only)	*70 g*
Classification	*security grade 2 / environment class II / ACE type B (according to EN 50131-1)*
Environment	*II. indoor general*
Operating temperature range	*-10 °C to +40 °C*
Average operating humidity	*75 % RH, non-condensation*
Certification body	*Trezor Test s.r.o. (No. 3025), Kiwa Nederland b.v.*
In compliance with	*EN 50131-1, -3, -5-3, ETSI EN 300 220-2, EN 50130-4, EN 55032, EN 62368-1, EN IEC 63000, T 031*
Can be operated according to	*ERC REC 70-30*

JABLOTRON a.s. declares that the JA-112R is designed and manufactured in compliance with the relevant European Union harmonisation legislation: Directives No.: 2014/53/EU, 2014/35/EU, 2014/30/EU, 2011/65/EU, when used as intended. The original declaration of conformity is available at www.jablotron.com in the Downloads section.

Note: Although the product does not contain any harmful materials, do not dispose of it in the rubbish, but take it to an electronic waste collection point. For more detailed information, visit www.jablotron.com in the Downloads section.