JA-102KY, JA-102KRY control panels of the JABLOTRON Mercury alarm system Installation manual

Control panel type: JA-102K communicator type: JA-194Y-LITE *Radio module model: JA-11xR

***Valid for the JA-102KRY only**

Caution:

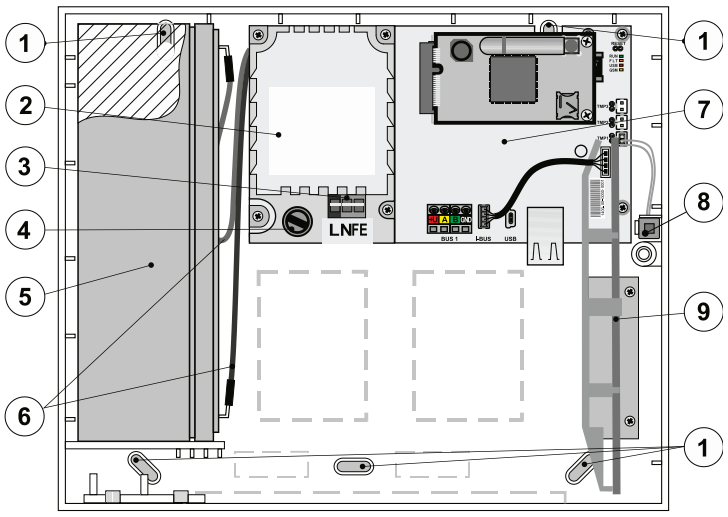
1. The JABLOTRON Mercury alarm system is only intended to be installed by a trained technician with a valid certificate issued by an authorized Jablotron distributor.
2. JABLOTRON Mercury control panels are configured using the MyCOMPANY mobile application. The credentials are given to the Jablotron Installation Partner upon successful completion of the certification training.
3. JABLOTRON Mercury control panels are equipped with integrated connectivity via a specific SIM card - do not remove or replace the SIM card. LAN communication is only used as a backup.
4. The JABLOTRON Mercury Alarm requires a regular monthly payment for JDS (Jablotron Digital Service) service. The payment method depends on the country where the system is installed. If the service is not paid for, full system functionality will be restricted. The system will remain fully operational (locally), but the ability to control it via MyJABLOTRON and configure it via MyCOMPANY will be suspended. The user will be informed of this impending restriction in advance by email to the address provided when registering the system.
5. The overview of supported devices, see Appendix no.1.

1. The control panel basic description

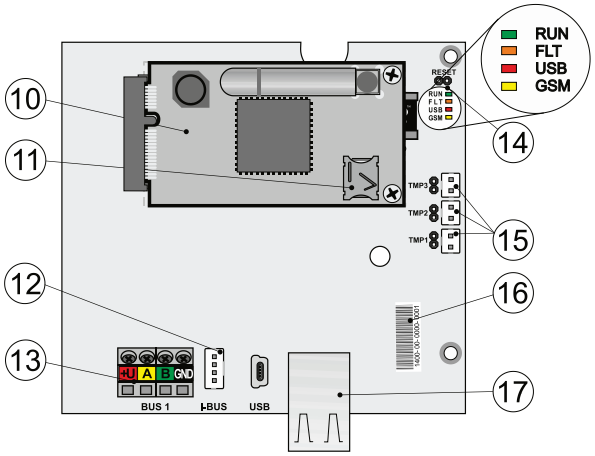
1.1. Description of the variants JA-102KY, JA-102KRY

JA-102KY: control panel for Bus installations

JA-102KRY: control panel is equipped with radio module and can be used with both Bus devices and Wireless devices



***1** – holes for mounting the box on the wall, **2** – power supply module, **3** – mains power supply terminal, **4** – fuse; **5** – backup battery, **6** – backup battery cables, **7** – control panel mainboard, **8** – tamper contact of the box, **9** – the JA-11xR radio module (inside of the JA-102KRY control panel),*



***10** – GSM communicator, **11** – the SIM card holder with inserted SIM card, **12** – Bus connector for internal connection of the radio module, **13** – Bus output terminal for connection of Bus devices, **14** – LED indicators with RESET jumper, **15** – control panel box tamper contacts connectors, **16** – serial number for the registration via MyCOMPANY application, **17** – LAN connector (internet)*

1.2. LED indicators on the control panel mainboard (14)

RUN	Green	Rapid flashing during operation of the communication Bus (data transferring).
FAULT	Yellow	Permanent lit of yellow LED indicates general fault in the system (more detailed info in the application or on the keypad with LCD display).
GSM	Red	If the GSM Communicator is installed: – lits permanently after the power is connected => logging into the GSM network (max. 1 min), – off if the GSM is OK and no communication takes place, – flashing in 1 s intervals, if no GSM network is available.

2. Before system installation

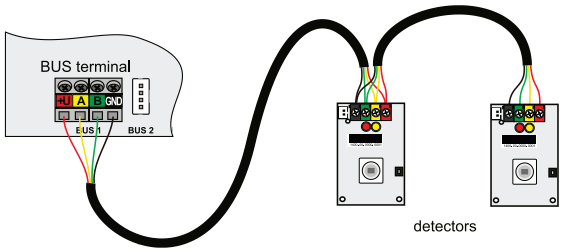
1. First, consider how to secure the object, the arrangement of individual devices and the number of sections, and how to control the system.
2. Mind the fact that when you select Bus devices, their total current consumption should not exceed 110 mA (to ensure the system will be backed up for the 12 hrs as the norm requires). The consumption of each device is given in Appendix no. 1: Overview of supported devices for the alarm JABLOTRON Mercury.
3. Wireless devices must be installed in such a way that their radio communication is not shielded or interfered with. During installation, always check the signal quality of individual devices directly in MyCOMPANY app.
4. Select a hidden place for the control panel (inside the protected area) where mains power is available and there must also be a good GSM signal reception (LTE).
5. The requirements of the relevant standards must be respected during the design and installation of the alarm.

3. JABLOTRON Mercury installation procedure

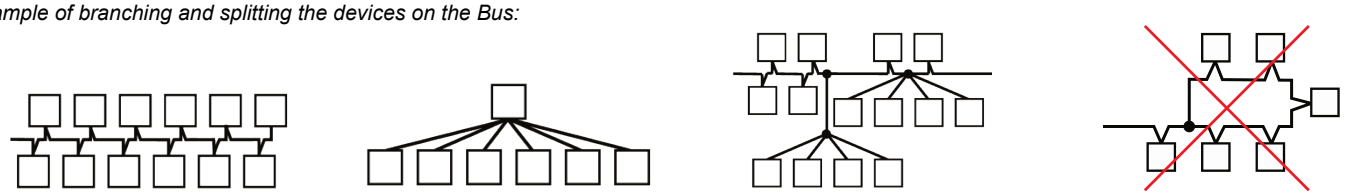
Connecting JA-100 control panels using LAN to the same network with active 48V PoE power supply may cause unreliable network communication. We recommend using a PoE splitter.

1. Using the drilling template, attach the control panel on the selected place. Do not connect the mains power yet.
2. Install the Bus devices and connect them to the Bus. Do not close their covers yet.
   a) The CC-02 cable is recommended.
   b) Connect the wires according to the color marking of the terminals. The bus cable can be freely branched (however, the ends of the individual branches must not be interconnected).

Connecting detectors to the control panel



Example of branching and splitting the devices on the Bus:



Daisy-chain (linear Bus structure) | Star Bus structure | Daisy-chain & Star (tree Bus structure) | Forbidden Bus connection

3. Connect the mains power to the power supply connection terminals (3) in the range of ~110–230 V, 50–60 Hz. The control panel is a Class II double-insulated device, so use a two-wire supply (L and N conductors) to connect the mains power. The protective earth wire of the mains supply (if used) can be connected to the FE terminal. Check that the wires are well fixed in the terminal, then fix the cable firmly with the clamp.
4. Insert the battery into the control panel (figure 1–5) and fix it by strap inside the box.
   Warning – the backup battery is delivered in charged condition; it must not be short-circuited!
5. Connect the supply leads of the battery (figure 1–6). Mind the correct polarity of the supply leads! (red wire + pole, black wire - pole).
6. Switch the mains power on for the control panel and wait until the system logs into the GSM network (red LED goes OFF).
7. Launch the MyCOMPANY configuration app on your smartphone and log in with the details you obtained after the certification training.
8. Click on the "NEW INSTALLATION +" button to start the configuration (Fig. I).
9. Scan the barcode of the control panel serial number (figure 1–16) and wait for confirmation of the connection (Fig. II).
10. Enter the name of the installation and fill in the owner's email, which will be the login to the MyJABLOTRON user application (a confirmation about the account creation will be automatically sent to the email along with the login data).
11. Wait for the registration and initial activation of the control panel to complete.
12. In the "Periphery management" module, enter the Control panel item, click Status, and check the GSM network signal quality (%) (Fig. III).
13. Then, in the "Periphery management" module, use the "Add a peripheral" button to scan the serial number of the first device (you can find it on the PCB, on the back of the device or on the paper box of the product) (Fig. IV).
    Follow the instructions in the mobile app.
    a) insert batteries into Wireless device,
    b) close the device's cover,
    c) enter the name of the device in the application and set other parameters if needed,
    d) wait until the connection with the device is established and select Save in order to return to Periphery management,
    e) if the connection is not established, open and close the device cover (or remove and reinsert the batteries or check the Bus connection).
    f) repeat the procedure for all installed devices, or remote controls (with the remote controls the connection is established by pressing any button),
    g) the goal is complete list of all devices with OK status.
14. In the "User Management" module, create the users (for assigning tags and cards, we recommend selecting the "Attaching the card to the keyboard" enrolment method). Do not forget to change the codes for the SERVICE and MASTER users (Fig. V).
15. Check the functionality of all devices using the " Testing the peripherals" module (Fig. VI).
16. Close the control panel box.
17. If everything is OK, quit the Service Mode of the control panel and test the alarm operation.

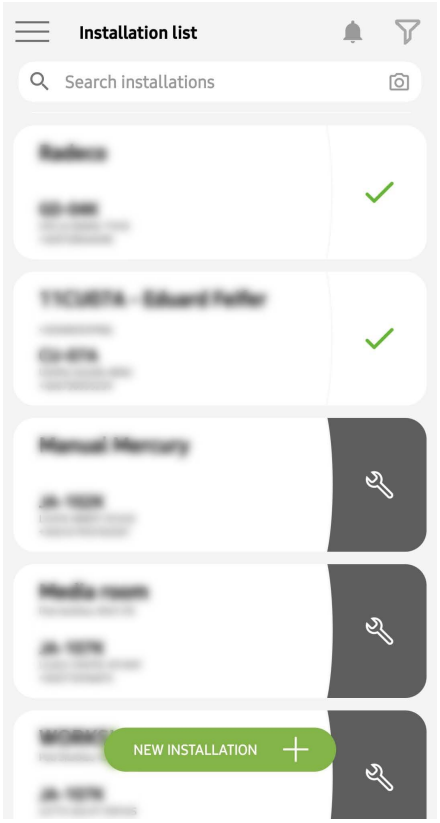


Fig. I



Fig. II

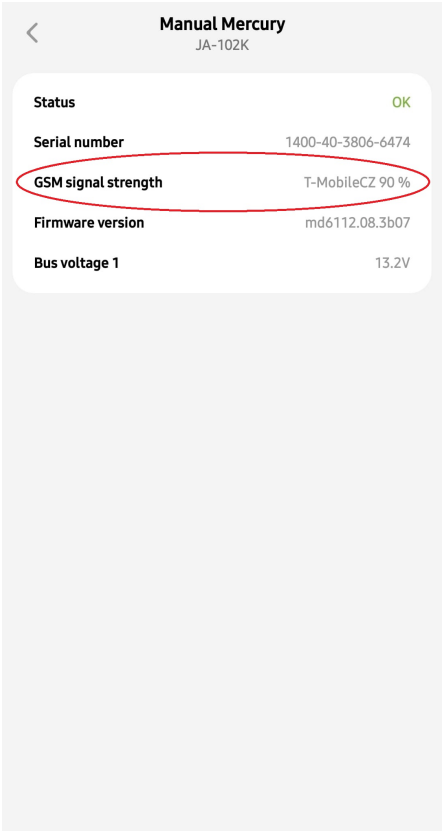


Fig. III

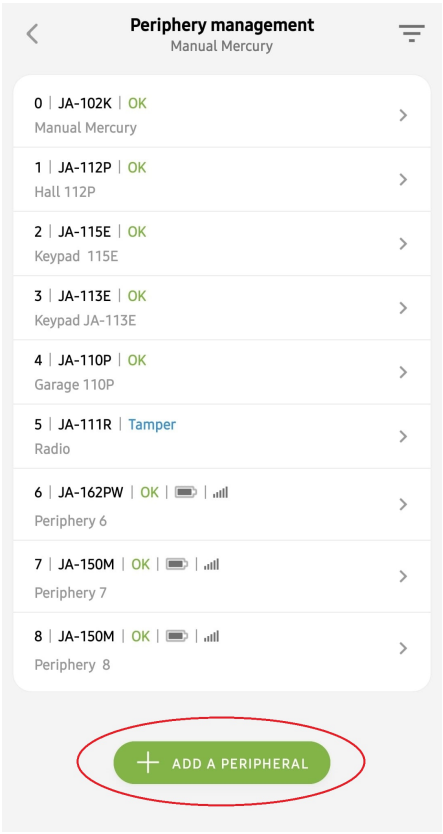


Fig. IV

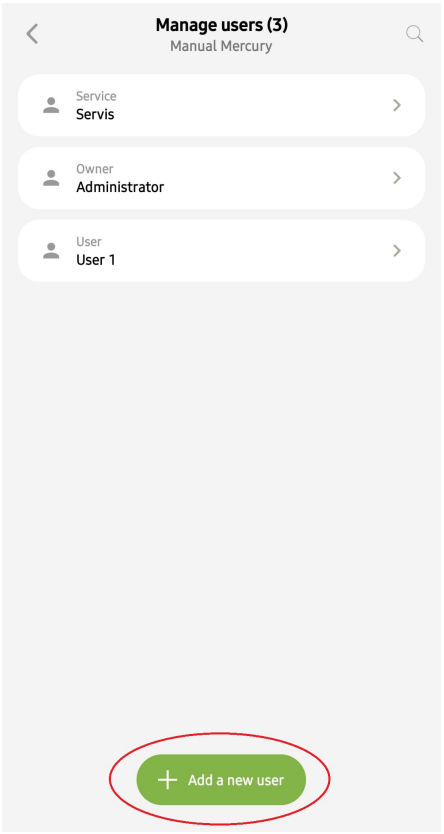


Fig. V

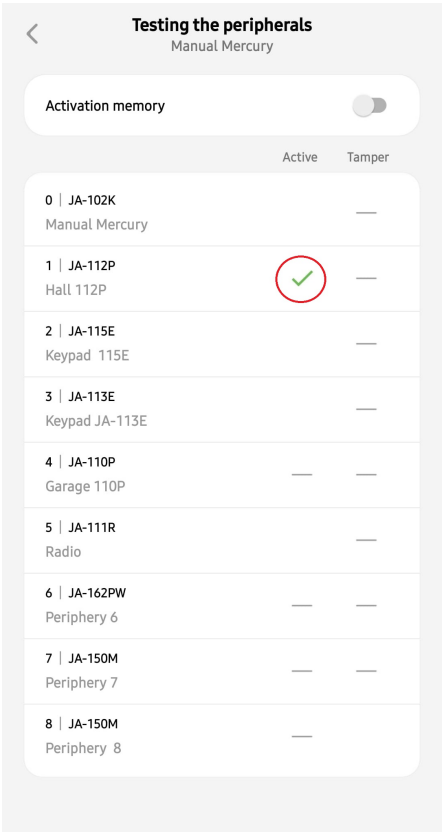


Fig. VI

4. Alternative configuration before system installation:

Preparation:

1. Connect the mains power to the power supply connection terminals (3) in the range of ~110–230 V, 50–60 Hz. The control panel is a Class II double-insulated device, so use a two-wire supply (L and N conductors) to connect the mains power.
2. Switch the mains power on for the control panel and wait until the system logs into the GSM network (until the red LED turns OFF).
3. Launch the MyCOMPANY configuration app on your smartphone and log in with the details you obtained at the certification training.
4. Click on the "NEW INSTALLATION +" button to start the configuration (Fig. I).
5. Scan the serial number barcode of the control panel (figure 1–16) and wait for confirmation of the connection (Fig. II).
6. Enter the name of the installation and fill in the owner's e-mail, which will be the login to the MyJABLOTRON user application (a confirmation about the account creation will be automatically sent to the email along with the login data).
7. Wait for the registration and initial activation of the control panel to complete.
8. **Do not connect Bus devices nor insert batteries into Wireless ones!**
9. In the "Periphery management" module, use the "Add a peripheral" button to scan the serial number barcode of the first device (it can be found directly on the PCB, on the back of the device or on the paper packaging) (Fig. IV).
   a) enter the name of the device in the application and set other parameters if needed,
   b) tap the Save button to return to Periphery management (without establishing a connection),
   c) make a note about planned location of the device,
   d) repeat the procedure for all installed devices and remote controls,
   e) in the list of devices, it will be indicated that the connection has not been established.
10. In the "User Management" module, program the users (Fig. V).
11. Switch off the power to the control panel and disconnect backup battery. Quit the application.

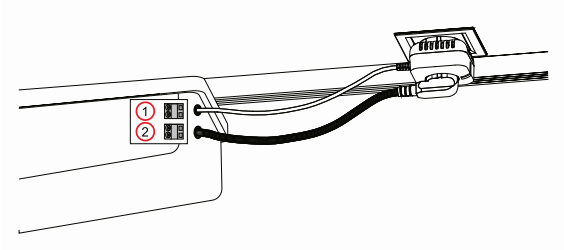
The real installation and making it work:

12. Using the drilling template prepare the holes and install the control panel on the selected place. Do not connect mains power yet.
13. Mount the devices at the required place.
14. Connect the bus devices and leave their covers open.
15. Connect the mains power to the power supply connection terminals (see chapter 3.3.).
16. Insert the battery into the control panel (figure 1–5) and fix it by strap inside the box.
    Warning – the backup battery is delivered in charged condition; it must not be short-circuited!
17. Connect the supply leads of the battery (figure 1–6). Mind the correct polarity! of the supply leads (red wire + pole, black wire - pole)
18. Switch on the power to the control panel and wait until the system will be logged into the GSM network (1 – 2 minutes until the red LED turns OFF).
19. Launch the configuration application MyCOMPANY and enter the previously saved installation (configuration is loaded).
    a) If you have forgotten where the device is to be mounted, use the app and in Periphery Management, add the device by reloading the barcode - you will see the settings you made earlier, including the location name.
20. In the " Periphery management " module, enter the Control panel item, click “Status”, and check the GSM network signal quality (%) (Fig. III).
21. Prepare batteries for the wireless devices.
22. Open gradually the settings for each device in Periphery Management, insert batteries and close the covers (press any button on the remote control). Wait for the connection to be established and proceed to the next device.
    a) if the connection is not established, open and close the device cover (remove and reinsert the batteries or check the Bus connection or press any button in the case of a remote controller).
23. Check the status and configuration of each device in Periphery Management, so that all devices indicate OK (Fig. IV).
24. Check the user settings in the “User management“ module and don't forget to change the Service and Administrator access codes (Fig. V).
25. Check the functionality of all devices using the " Testing the peripherals" module (Fig. VI).
26. If everything is OK, leave the Service Mode of the control panel and test the alarm operation.

5. Control of garage doors and entrance gates (or other devices)

1. JABLOTRON Mercury allows you to control (from the user application or using the bottom pair of buttons on the remote control) the opening of the garage doors and the entrance gate.
2. The control panel has 2 preset control outputs for this purpose. Editing the names and testing of the outputs is done in the module "Other" - Control outputs.
3. If an output is activated from the MyJABLOTRON app or by pressing a button on the remote control, the appropriate output switches ON.
4. Connection of the controlled device must be realized by an appropriate output relay module or a pass-through socket with an output for garage door control.
5. The outputs can be used to control any device that can be controlled by a triggering 1s pulse or function ON/OFF.

Example of garage door control using the JB-162N-PLUG



1 – terminals of the drive control input (potential-free contact); 2 – 230 V drive power supply terminals

6. Wireless doorbell

Using the JA-159J wireless doorbell button and the JA-152A wireless indoor siren, the wireless doorbell function is automatically activated. If you install multiple doorbell buttons, they can all trigger the sound of the doorbell on all wireless sirens of that type.

7. Thermometers

The JA-151TH and the JA-111TH thermometers can be enrolled to the control panel. The measured temperatures are then shown in MyJABLOTRON application. The temperature from one thermometer can also be displayed on the keypad LCD.

8. Reset of the control panel

If it is necessary to return the control panel to the factory settings:

1. Open the control panel cover: the tamper contact must be activated to reset.
2. Turn off the mains power of the control panel and disconnect the backup battery.
3. Connect the pins on the control panel board marked RESET (using the supplied jumper).
4. Connect the backup battery and then the mains power of the control panel. The green, yellow and red LEDs on the control panel will be lit next to the reset jumper.
5. Wait about 15 s and then disconnect the jumper.
6. Then all the LEDs flash shortly to confirm that the panel reset is complete. The control panel and Bus devices are then rebooted.
7. The control panel has been reset to factory settings, and system language as well. However, resetting the control panel does not erase the event history.
8. If you want to use the control panel on another installation, you must deactivate the control panel in the MyCOMPANY application first and go to the Other - Device Management tab. This will delete its configuration and the access of the current administrator in MyJABLOTRON.

Caution:



- **The manufacturer accepts no liability for damages if the system is improperly installed or programmed.**
- If the system is equipped with a GSM communicator, there must be a good quality GSM signal at the place of installation (check with a mobile phone).
- Only a person with a relevant electrical qualification may install the control panel mains supply. The control panel power supply has double safety circuit separation. The protective earth wire of the mains supply (if used) can be connected to the FE terminal.
- All power to the control panel must be completely turned off during installation and wiring of the system Bus devices.
- Never power the system up (mains power nor the battery) when the GSM communicator antenna is disconnected. The fuse holder with a glass fuse does not provide for safe disconnection.

1. Prepare power supply of the control panel – use a suitable cable with double insulation and cross-section of 0.75 to 1.5 mm^2.
2. It is recommended to install overcurrent and overvoltage protection elements on the control panel power supply.
3. **If a bus cable with shielding is used, this shielding must not be connected to the common GND terminal or any connection terminal in the control panel. The bus cable connecting the control panel and devices shall not be connected at any point to form a closed loop.**
4. The I-BUS connector (3) on the JA-102KY/JA-102KRY control panel mainboard is intended solely for connection of the internal radio module.

9. Technical specifications

Parameter	JA-102K, JA-194Y-LITE a *JA-11xR
Type of installation	Fixed installation
Nominal panel voltage / frequency / fuse	~ 110–230 V/50–60 Hz, max. 0.28 A with fuse F1.6 A/250 V, protection class II
Electric input power / current	max 23 VA/0.1 A
Protection class	II.
Back-up battery	12 V; 2.6 Ah max (lead gel)
Backup battery low batt (fault indication)	≤11 V
Maximum battery charging time (80% capacity)	72 h
Bus voltage/max. fluctuation (red - black)	12.0 ÷ 13.8 V_{DC}/±100 mV
Maximum continuous current from consumption from the control panel	1000 mA
@ for back-up 12 hours (2.6 Ah battery)	115 mA
Maximum number of sections	4
Maximum number of devices	31 devices + 31 remote controllers
Maximum number of users	32 (Service, Administrator + 30 users)
Maximum number of programmable outputs	2
Alarm connection	**Jablotron Bus – dedicated cable connection** **Wireless connection (with the JA-11xR) – non-specific wireless connectivity, Jablotron wireless protocol**
Classification of alarm device	**Security grade 2 according to EN50131-6/environmental class II**
@ according to the standards	**EN50131-1, EN 50131-3, EN 50131-6, EN 50131-5-3 (with the radio module usage), EN 50131-10, EN 50136-1, EN 50136-2**
@ environment	**Indoor general**
@ operational temperature range/humidity	**-10 °C to +40 °C/75% non-condensing**
@ power supply unit	**Type A – main power supply with backup battery being charged**
@ event memory capacity	Approx. 7 million latest events, including source, date and time
@ system reaction to device communication loss	Fault or Tamper – according to settings and selected profile @ Bus within 10 s @ wireless communication within 2 h (since the last communication) @ wireless communication within 20 min prevent setting the section
@ system reaction to invalid code entry	Tamper alarm after 10 wrong code entries and based on the selected profile blocking of all controllers for the next 10 minutes.
@ ATS classification	Supported ATS classes: SP2 – SP5, DP2 – DP4 SPT: type Z Operation type: Pass-through LAN onboard: SP2 – SP5 (with IP protocol) GSM2202MD SP3 – SP5 (JABLO IP, ANSI SIA, DC-09) LAN + GSM2202MD DP2 – DP4 JABLO IP, ANSI SIA, DC-09)
@ ATS alarm communication protocols	JABLO IP
@ ATC anti-substitution and information security	Jablotron protocols: proprietary AES encryption with minimum 128bit encryption key ANSI SIA DC-09.2012 protocol with 128 bit AES encryption
LAN communicator	Ethernet interface CAT 5 (RJ-45)
Dimensions (mm)	268 x 225 x 83
Weight with/without battery	1809 g/919 g
Basic JA-11xR module parameters	868.1 MHz, <25 mW, GFSK <80 kHz
Radio emissions	ETSI EN 300 220-2 (JA-11xR module)
EMC	EN 50130-4, EN 55032, ETSI EN 301 489-1, ETSI EN 301 489-3
Electric safety conformity	EN IEC 62368-1
Operational conditions	ERC REC 70-03
Certification body	TREZOR TEST (no. 3025)

JABLOTRON a.s. hereby declares that the JA-102K, JA-194Y-LITE are in compliance with the essential requirements and other relevant provisions of Directive 2014/53EU, 2014/35/EU, 2014/30/EU and 2011/65/EU. The original of the conformity assessment can be found at www.jablotron.com – Technical support section.

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.

Electronic version of the manual

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10. Appendix no. 1 - overview of supported devices for the alarm JABLOTRON Mercury

Type	Description	Bus current consumption:
JA-115E	Bus 4 segment keypad, controls up to 4 sections	15 mA
JA-113E	Bus access module with RFID and keypad, controls only 1 section	10 mA
JA-111R	Bus radio module for wireless connection	35 mA
JA-112R	Bus interface for JA-100 wireless components	30 mA
JA-110P	Bus PIR motion detector	5 mA
JA-110A	Bus internal siren	5 mA
JA-110A II	Bus internal siren with backup	5 mA
JA-120PC	Bus PIR motion detector combined with a camera	5 mA
JA-120PC (90)	Bus PIR motion detector with a photo verification camera 90°	5 mA
JB-110N	Bus power output module	5 mA
JB-111N	Bus signal output module	5 mA
JA-120PB	Bus combined PIR motion and glass-break detector	5 mA
JA-110P-PET	Bus PIR motion detector with basic pet immunity	5 mA
JA-112P	Bus PIR motion detector	5 mA
JA-115P	Bus ceiling PIR motion detector	2.8 mA
JA-115A	Bus external siren	5 mA
JA-112M	Bus module for magnetic detectors – 2 inputs	7 mA
JA-110ST	Bus combined smoke and heat fire detector	5 mA
JA-111ST-A	Bus combined smoke and heat detector	5 mA
JA-120PW	Bus combined PIR and MW motion detector	5 mA
JA-122PW	Bus combined PIR and MW motion detector	5 mA
JA-111H TRB	Bus module – interface for wired detector	8 mA
JA-122PB	Bus combined PIR and glass-break detector	2.4 mA
JA-122PC	Bus PIR motion detector with a photo verification camera	5 mA
JA-155E	Wireless 4 segment keypad with LCD, controls up to 4 sections	4 x LR6 AA
JA-153E	Wireless access module with RFID and keypad	2 x LR6 AA
JA-150P	Wireless PIR motion detector	2 x LR6 AA
JA-150P PET	Wireless PIR motion detector with basic pet immunity	2 x LR6 AA
JA-151M	Wireless magnetic door detector – mini	1 x CR2032
JA-152J MS II	Bi-directional two-button key fob	1 x CR2032
JA-154J MS II	Bi-directional four-button key fob	1 x CR2032
JA-180PB	Wireless PIR motion/glass-break detector	1 x CR14500, 1 x CR14250
JA-180W	Wireless PIR + MW detector	1 x CR14500
JA-151ST	Wireless combined smoke and heat detector	3 x LR6 AA
JA-152P	Wireless PIR motion detector	1 x CR123A
JA-155P	Wireless ceiling PIR motion detector	2 x CR123A
JA-160PC	Wireless PIR motion detector combined with a camera	2 x LR6 AA
JA-160PC (90)	Wireless PIR motion detector with a photo verification camera 90°	2 x LR6 AA
JA-163A RB	Wireless outdoor battery-powered siren	BAT-100A.01
JA-152A	Wireless internal siren or an AC socket	BAT-3V2-CR2
JA-151ST-A	Wireless combined smoke and heat detector	3 x LR6 AA
JA-150M	Wireless magnetic detector with 2 universal inputs	1 x LR6 AA
JA-150N	Wireless power output module	230 V AC, 1.5W
JA-151N	Wireless signal output module	12V DC, 18/35 mA
JB-162N-PLUG	Pass-through socket with a controlled output (French)	110–230 V/1 W
JB-163N-PLUG	Pass-through socket with a controlled output (Schuko)	110–230 V/1 W
JA-162PW	Wireless dual PIR + MW motion detector	2 x CR123A
JA-159J	Wireless doorbell button	1 x CR2032
JA-162PB	Wireless combined PIR motion detector with glass-break detector	2 x CR123A
JA-162PC	Wireless PIR motion detector with a photo verification camera	2 x CR123A
JA-111TH	Bus temperature detector	5 mA
JA-151TH	Wireless temperature detector	1 x CR2032
JA-116E	Bus touchscreen keypad with RFID reader	40 mA
JA-156E	Wireless touchscreen keypad with reader RFID	BAT-3V7-2500, HLK-PM12JBT
JA-154A	Wireless battery indoor siren	3 x LR3 AAA

NOTES: