



JA-153M, JA-153M-AN, JA-153M-BR, JA-153M-GR Wireless magnetic detector with recognition of external magnetic fields

The product is a component of the **JABLOTRON** system. It is used for the detection of opening doors, windows, etc. This type of detector significantly increases the level of security by detecting foreign magnetic fields and is optimized for specific operating conditions of the installation thanks to calibration. The device has a selectable reaction (pulse or status). It should be installed by a trained technician with a valid certificate issued by an authorized distributor.

This device is compatible with JA-102K, JA-103K, JA-107K and JA-152KRY control panels.

Installation

During installation, if possible, avoid placing the device directly onto metal surfaces which may negatively impact the device's ability to communicate with the system.

Two types of magnets are supplied with the detector. A ferrite magnet in plastic housing (A) and a ring magnet (B). The correct location of both types of magnets is shown in the illustration. The distances for activation/deactivation of the detector with the ferrite magnet (for non-magnetic mounting surface) are shown in the table. For other magnet types or opposite polarity, these values may vary.

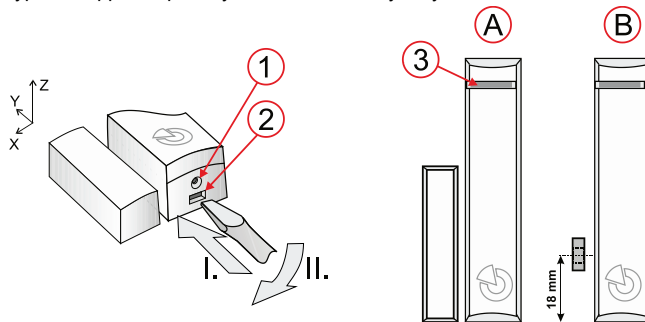


Fig. 1: Description of internal and external parts of the product

1 – locking screw hole; 2 – housing tab; 3 – indication LED; 4 – battery; 5 – serial number; 6 – housing tamper contact

1. Open the device cover by pressing the housing tab (2) (e.g., with a flat screwdriver).
2. Mount the device's backplate onto a chosen location.
3. Screw the selected magnet (A, B) onto a moving part, e.g. a door leaf. The bottom edge of the ferrite magnet plastic must coincide with the bottom edge of the detector housing. It is recommended to use a special non-magnetic screw (included in the package) to attach the ring magnet.
4. Proceed according to the control panel installation manual:

Basic procedure:

- a. In the **F-Link** software, select the required position in the **Devices** window and launch the enrolment mode by clicking on the Enrol option.
- b. Insert the battery (mind the correct polarity). The enrolment signal is transmitted when the battery is inserted into the detector.

5. Close the detector cover.

Notes:

- The detector can also be enrolled into the system by entering its serial number (5) into the F-Link software (1400-00-0000-0001). You can find the sticker with the serial number/bar code, located on the battery holder.
- 6. In order to comply with norm 50131-1 (security grade), the front cover must be secured with the supplied locking screw (1).
- 7. Configure the detector by following the *Internal settings* chapter in this manual.

Detector communication in the system

The detector uses bi-directional asynchronous communication which allows changing the internal settings remotely and saving battery capacity simultaneously.

After enrolment to the system, the detector operates in an accelerated mode, until the service mode is exited (but no longer than 24 h). In this mode, the detector checks every 90s whether the system is still in service mode or if new settings should be taken over.

In service mode, the detector communicates once every 19 minutes or with each activation. Therefore, when switching from operational mode to service mode, it can take up to 19 minutes for the detector to recognize control panel status or internal settings change, this is indicated by the

red font on the internal settings button. This period can be reduced by activating the detector or its tamper sensor.

Please note:

It is not necessary to wait 90 s (or 19 min) until the detector confirms delivery of the new setting, when changes are applied. The system remembers the requested change and forwards the new settings to the detector during the next period of regular communication.

Internal settings of the detector

The settings are configured by the F-Link software - Devices tab. Use the **Internal settings** option on the detector position. A dialog will appear in which the detector functions can be set:

LED indication: On/Off

Pulse mode: Only activations are transmitted to the system

Detection of external magnetic field: When switched on, the detector will analyse its surrounding magnetic field and in case of its disturbance (e.g. by an external magnet) the detector will declare Input Activation and a Fault. The function brings higher protection of the object.

Warning: When the **external magnet detection** function is switched on, the window or door can only be opened in the direction in which the magnet movement has been calibrated. Otherwise, the detector will declare a Fault simultaneously with the Activation. Therefore, this function cannot be used for windows or doors that are opened in multiple ways (opening, tilting).

Calibration: button to start the calibration process.

Calibration

Used to set the precise trajectory and properties of the detector's magnetic field. Calibration **should always be performed after the final placement of the detector**. Please note that without calibration, the proper functioning of the detector cannot be guaranteed. If for some reason calibration fails or is started accidentally, it can be terminated by activating the tamper contact (opening the detector cover).

You can view the calibration procedure in the instructional video:

To start calibration, the system must be in Service mode.

Starting calibration directly from the peripheral (no need to use Internal Peripheral Settings in F-link):

1. Activate the detector's tamper very briefly (open for 1-2 seconds and close).
2. The red LED will start to signal **readiness** for calibration – regular **double flashing**.
3. Open the window/door for 2 seconds, the red **LED will start to flash rapidly**.
4. Close the window/door and **wait for the LED to change its flashing pattern** – it will switch to slow flashing (within 2 seconds).
5. When the LED is flashing slowly, **open** the window/door again for 2 seconds. The recorded magnetic field values will be confirmed again.
6. **Close the window/door and wait**. After settling down within 2 seconds, the LED **will confirm** successful calibration with a long light and the red LED will turn off.

Starting calibration from F-link (requires interaction with the detector):

1. In F-link, **enter** the Internal Settings of the detector.
2. In Internal Settings, press the **Start Calibration** button.
3. Calibration will start within 90 seconds (asynchronous communication), or you can speed up the timing by briefly **activating** the detector – open and close the window/door.
4. **The detector will connect** to F-link, the yellow LED will light up (confirming that Internal Settings has been opened) and will remain lit while the settings are open. At the same time, the red LED will begin to **flash twice regularly** – indicating that it is ready for calibration.
5. Open the window/door for 2 seconds, the red **LED will begin to flash rapidly**.
6. Close the window/door and **wait for the LED to change its flashing pattern** – it will switch to slow flashing (within 2 seconds).
7. When the LED is flashing slowly, **open** the window/door again for 2 seconds to confirm the recorded magnetic field values.
8. **Close the window/door and wait**. After settling down within 2 seconds, the LED **will confirm** successful calibration with a long light and then turn off.
9. In F-Link, the calibration status will change to "OK." Use Save to record.



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Tables of distance values for activation and deactivation of the detector when using the supplied ferrite magnet (values may vary when used with other permanent magnets).

Axis	X	Y	Z
Activation distance (mm)	11	10	23
Deactivation distance (mm)	8	8	18

Table 1: Distances for activation/deactivation of a detector installed on non-magnetic surface.

Axis	X	Y	Z
Activation distance (mm)	9	10	25
Deactivation distance (mm)	7	8	20

Table 2: Distances for activation/deactivation of a detector installed on magnetic surface.

Detector testing

In the control panel service mode, the detector LED indicates each activation (max. 24 hours). Individual detector activations can be checked in the F-Link program, in the Diagnostics tab.

In normal detector operating mode, activation is not signaled.

Battery replacement

The system sends a report automatically when the battery is low. Remember to switch the system to Service mode before changing the batteries (otherwise a tamper alarm will be triggered). Check the right function of the detector after battery replacement.

Technical specifications

Power	1x alkaline battery, type: AAA (LR03, 1.5 V / 1.2 Ah) Please note: Battery is not included.
Typical lifetime of battery	about 2 years (max. 10 activation daily)
LowBatt state	<0.95 V
Quiescent current consumption	50 µA
Maximum current consumption	30 mA
Communication frequency	868.1 MHz, JABLOTRON protocol
Maximum radio-frequency power (ERP)	<25 mW
Communication range	approx. 500 m (open area)
Dimensions transmitter part	20 x 86 x 20 mm
Dimensions magnet part	16 x 55 x 15 mm
Weight (without battery)	25 g
Classification	security grade 3 / environmental class II (according to EN 50131-1)
Operational environment	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.
Complies with	EN 50131-2-6, EN 50131-5-3, EN 50131-6, ETSI EN 300 220-2, T 031, EN 50130-4, EN 55032, EN 62368-1, EN IEC 63000 ERC/REC 70-03
Can be operated according to	
Recommended screw	2x  ø 3,5 x 40 mm (flat head)



JABLOTRON a.s. hereby declares that the JA-153M product is in a compliance with the relevant Union harmonization legislation: Directives No.: 2014/53/EU, 2014/35/EU, 2014/30/EU, 2011/65/EU if it is used as intended. 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.