

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

Type: 5MAG2203SA

The product is a component of the **JABLOTRON** system. It is used for the detection of opening doors, windows, etc. 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-103K and JA-107K 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.

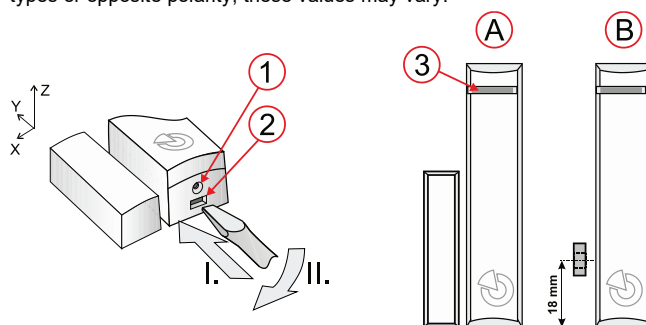


Fig. 1: Description of internal and external parts of the product
1 – locking screw hole; 2 – housing tab; 3 – indication LED;
4 – battery; 5 – serial number; 6 – housing tamper contact

1. Open the device cover by pressing the housing tab (2).
2. Mount the device's backplate onto a chosen location.
3. Screw the selected magnet 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 norms, 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.

Note: For the correct function of the external magnetic field detection it is necessary to calibrate the detector to the nominal value of the magnetic field.

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.

To start the calibration from the periphery, the system must be in Service mode, then Activate tamper contact (open the plastic cover) and within 5 seconds deactivate the tamper contact (close the plastic cover).

This procedure will enable calibration directly from the periphery – indication as described below from point 3 (inclusive). The Yellow LED will not be lit when calibration is started from the detector (it is only lit if the peripheral has an open internal setting in the F-Link). Calibration can be terminated by activating the tamper contact (open the plastic cover). Calibration procedure in F-Link + optical indication:

1. LED Off = the device waiting for connection. To continue, **activate and deactivate the magnet** (open and close the window/door).
2. Yellow LED on = detector has established a connection. **Start calibration** to continue.
3. **Activate the detector** in order to confirm presence of the magnet. The LED indicates yellow with the red LED regularly flashing twice.
4. **Please return the magnetic detector into its un-activated state.** Yellow LED on + rapid flashing of red LED = magnetic detector calibration takes place for approx. 4 s.
5. Yellow LED on + slow flashing red LED = detector is ready to continue calibration. To continue, **activate the detector by opening and closing the window/door**. Confirmation of the detector calibration will be indicated by the red LED lighting up for approx. 1 s. Then the red LED will go out and the setting status will change to **complete**, the yellow LED remains lit.

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.

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.

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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 50131-1, -2-6, -5-3, -6, ETSI EN 300 220-2, T 031,
EN 50130-4, EN 55032, EN 62368-1, EN IEC 63000

Can be operated according to ERC/REC 70-03

Recommended screw 2x  ø 3,5 x 40 mm (flat head)



JABLOTRON a.s. hereby declares that the 5MAG2203SA 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.

