

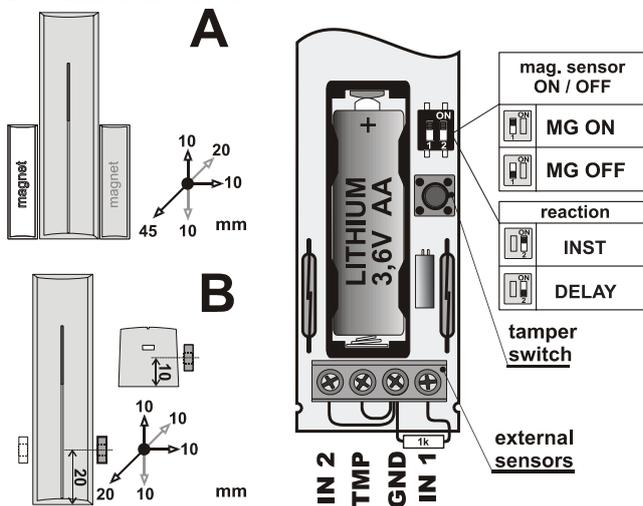
# The JA-181M wireless magnetic door detector & universal transmitter

The JA-181M is a component of Jablotron's alarm system. It is designed to detect the opening of doors, windows etc. It can also be extended by a normally closed / normally open sensor. It is also designed to detect the handling of roller blinds. This is achieved by detecting CT-01 ratchet-wheel movements. Small movements are filtered out so that wind blasts do not cause false alarms. The JA-181M can be used with the LD-81 flood detector as well.

## Installation

Installation shall only be undertaken by technicians holding a certificate issued by an authorized distributor. This detector reacts to the removal of its magnet unit. The electronics should be installed onto the non-moving part of windows or doors, and the magnet onto the moving part. The detector should be installed vertically. Avoid locating it directly on a metal frame as metal influences the functioning of the magnetic sensor and radio communication. If the door or window is made of metal, we recommend installing the detector unit away from the metal and wiring up an external wired magnetic sensor which is connected to the detector.

There are two different types of permanent magnets in the package - a standard magnet in a plastic housing (A) and a whorl-shaped magnet (B) for use in places where there is not enough space for a standard magnet or for counter-sinking the magnet into a door or window's inner frame. The right positions for placing both types of magnets against the internal magnetic sensor are shown below as well as the reaction areas for magnets in millimeters in three axes of movement.



See the following instructions:

1. **Open the detector cover** by pressing the tab in.
2. **Screw the rear cover to the solid part** of the door/window.
3. **Attach the magnet to the moving part** of the window. Its distance from the detector should not exceed 5mm when the door/window is closed. The lower edge of the magnet should be aligned with the lower edge of the detector. Only a single magnet can be installed, either on the left side or the right side of the detector.
4. **Leave the battery disconnected and the cover open** and then follow the control panel or receiver manual. The basics of enrollment are:
  - Enter enrollment mode on the control panel by keying in "1" in Service mode
  - Install a battery into the detector to activate enrollment.
  - Exit enrollment mode by pressing "#"
5. To observe EN 50131-2-2 must be the tab must be secured by the supplied screw.

To enroll a detector after having already connected a battery, first disconnect the battery, and press and release the tamper sensor to discharge any remaining charge to ready the device for enrolment.

## DIP switches

**MG ON / MG OFF** Allows the internal magnetic sensor inside the detector to be **disabled** when the detector is only to be used with external sensors wired to its terminals.

**INS / DEL** DEL provides entrance & exit delays for detectors installed in a building entrance. INS allows the detector to instantly

trigger alarm activation if the control panel is armed. This DIP switch (INS/DEL) only has an effect if the detector has a **natural reaction assigned** to its address in the Jablotron control panel. It also has no effect when used with a JA-182N or JA-180N receiver.

Opening the cover makes the detector react with a tamper signal.

## Open / closed status detection

The detector has two different modes. The mode is indicated by one or two short flashes when the battery is inserted.

One flash means that it indicates both opening and closing the door or window (factory default setting). The control panel knows the status of doors / windows. Two flashes means the pulse mode in which the detector indicates only opening the door or window.

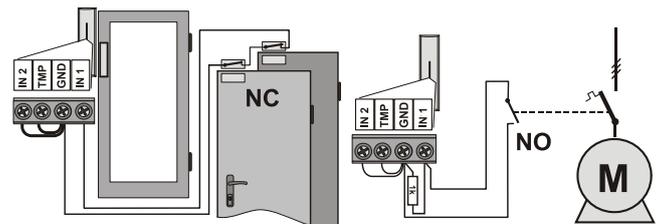
The mode can be set (changed) when keeping the tamper switch pressed while installing the battery for 3 to 5 seconds.

## Wiring up the external sensor

External sensors can be wired to the detector. It is possible to protect more doors / windows or to wire in other types of wired detectors. The inputs **IN2** and **TMP** react when disconnected from the **GND** common terminal. The **IN1** input can be used either as a NC input or a balanced loop input (EOL resistor 1k). The function is detected automatically.

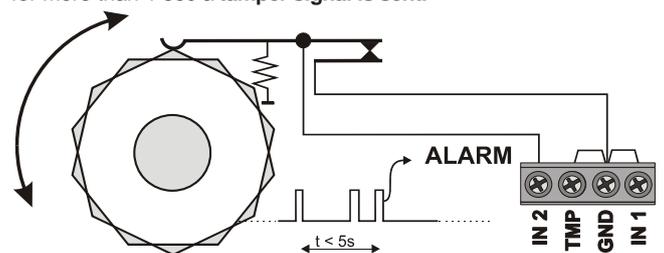
**IN1** If the IN1 terminal is disconnected from GND it sends the same signal to the control panel as if the magnet had been removed from the detector. The internal magnetic sensor can be disabled by the DIP switch if desired.

The balanced loop feature can be used when the connection of a detector with a NO output is needed. The resistor is then shorted out by the closing contact and the detector is triggered.



Wiring example for NC ... and NO contacts

**IN2** The IN2 input terminal receives signals from the ratchet-wheel CT-01. Alarm signals are then only transmitted when the ratchet contact is opened at least three times within 10 seconds. This filters out disconnections caused by accidental ratchet-wheel shifts, which are due to wind blasts. When the IN2 input is opened for more than 1 sec a **tamper signal is sent**.



Ratchet-wheel function scheme

**TMP** The TMP terminal sends a **tamper signal** to the control panel if disconnected from GND.

**Note:** If any of these two inputs is not used, it must be shorted to the **GND** terminal.

The maximum length of the cable for external detector would not be longer than 3 meters.

## Testing the detector

15 minutes after closing the detector cover, the LED indicates detector triggering. The strength and quality of detector signals can be measured by the control panel in Service mode.

## Battery replacement

The detector monitors its battery voltage and if too low, a transmission is sent to the control panel to inform the installer or user. The detector continues to function and shows each triggering of the detector with a flash of its LED. Battery replacement should



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not be delayed by more than two weeks. This should be done by a qualified technician with the control panel in Service mode.

*Expired batteries should not be thrown into the garbage, but disposed of according to local regulations.*

## Removing the detector from the system

If a detector is removed, the control panel announces the removal. The detector has to be deleted in the control panel before intentional removal.

## Technical parameters

Voltage Lithium battery type LS(T)14500 AA (3.6V / 2.4 Ah)  
Typical battery lifetime approx. 3 years  
for 20 daily activations maximum  
Communication band 868.1 MHz, Jablotron protocol  
Communication range approx. 300m (open area)  
Typical sensitivity range of the built-in magnetic sensor  
- see the picture  
Inputs for external sensors IN2 and TMP = normally closed loops  
IN1 normally closed or balanced loop (1k resistor)  
The maximum length of the cable for external detectors 3 meters  
Dimensions, weight 110 x 31 x 26 mm, 90g  
magnet: 56 x 16 x 15 mm  
Operational environment according to EN 50131-1 II. Indoor general  
Operational temperature range -10 to +40 °C  
EN 50131-1, EN 50131-2-6, EN 50131-5-3 classification: grade 2  
Complies with ETSI EN 300220, EN50130-4,  
EN55022, EN 60950-1  
Can be operated according to ERC REC 70-03



JABLOTRON ALARMS hereby declares that the JA-181M is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. The original of the conformity assessment can be found at [www.jablotron.com](http://www.jablotron.com), Technical Support section



**Note:** Although this product does not contain any harmful materials we suggest you return the product to the dealer or directly to the producer after use.