

# JA-180W Wireless combined PIR + MW detector

The JA-180W is a component of JABLOTRON alarm system. It is designed to detect human body movement inside buildings. A high immunity to false alarms is reached thanks to the combination of PIR and microwave (MW) detection. The detector guards like a usual PIR detector. If a physical movement is detected in the protected area, it also triggers the MW part of the detector and it confirms PIR detector activation. Information is then sent to the control panel. Detector is designed to be installed by a trained technician with a valid certificate issued by an authorized Jablotron distributor and control panel have to be equipped by JA-11xR radio module.

## Installation

The detector can be mounted on a wall or in a corner of a room. There should be no obstacles blocking the detector's "view" of the protected area. Keep the detector away from metal objects which could interfere with radio communication and the MW field.

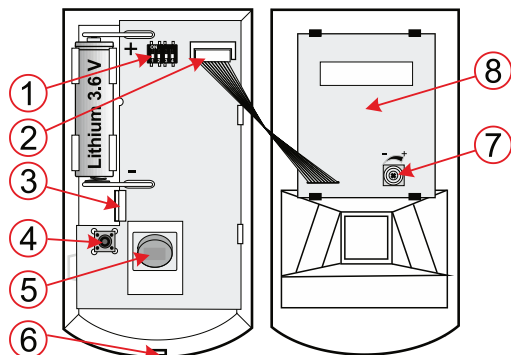


Figure 1: Description of internal parts of the product

1 – DIP-switch; 2 – MW part connector; 3 – PCB tab; 4 – tamper-switch; 5 – PIR sensor; 6 – front cover tab; 7 – MW sensitivity setting; 8 – MW detector

1. Open the detector cover by pressing the tab (6). Avoid touching the internal PIR element (5) – otherwise it can be damaged.
2. Remove the PCB which is held by an PCB tab (3). Leave the MW connector (2) of the MW part.
3. Punch screw holes through the rear plastic cover. Screw the rear cover to the wall. At least one screw should penetrate the tamper-sensitive section.
4. Put the PCB back till the tab (3) clicks. Insert a battery (mind the correct polarity) and follow instruction below. After installing a low battery into the detector, the LED is lit for 1 minute.
5. Close the detector cover till the tab (6) clicks. To comply with EN 50131-2-4 the tab (6) must be secured by the supplied screw.

## Enrolment to the system and settings

According to the type of control panel use recommended software or application – see control panel manual.

## Setting DIP switch

**Switch no. 1: DEL / INS:** the position of the DIP switch doesn't matter as the reaction is set by the recommended software.

**Switch no. 2: PIR NORM / HIGH:** selection of immunity to false alarms. The **OFF** (NORM) position combines very good immunity with fast sensor reactions. The **ON** (HIGH) position gives increased immunity with a slower reaction time and is only used for problematic installations.

**Switch no. 3: MW NORM / HIGH** sets the time period after PIR detection in which the MW detection is active. The position **OFF** – 1 s, **ON** – 2 s. The ON position may reduce battery life if the detector is activated frequently.

**Switch no. 4: MW NORM / TEST.** The position OFF is for the standard function of the detector. The MW detection is triggered by the PIR detection part for one or two seconds according to switch no. 3. The position ON – MW detection works continuously for testing purposes (walk test).

## Testing the detector

15 minutes after closing the detector cover, the LED indicators show detector activation. A **short flash** of the red LED indicates **PIR detection**, and a **long flash** (2 sec) indicates **MW confirmation** of the movement.

The MW detector reaction span is from 1 m to up to 15 m. In some cases, the detector can detect movement outside the room when obstacles are not metal (such as a thin wall, door, glass, flowing water in plastic pipes, etc.). For the proper functioning of the detector, it is essential to set the MW detection field according to the place which should be monitored. Generally, the MW detection field should be the same as the PIR detection one. For setting up, switch the fourth DIP switch to the TEST position. The RF range of the MW part is adjustable by the trimmer (7). Activation of the MW is indicated by a red LED. Because of the environment where the detector is installed and also because of the MW part's detection principle the detection characteristics can be changed according to the room where it is installed, especially by metal objects which cause reflections or shielding the transmitted MW signal.



**Always precisely check the PIR and MW coverage of the protected area during installation.**

To save battery energy, the PIR sensor part of the detector switches to battery-save mode 15 minutes after the cover is closed. During battery-save mode the PIR sensor still always detects movement. The first movement detected and consecutively confirmed by the MW part is then signalled to the control panel instantly, and for the **next 5 minutes the PIR sensor ignores any further movement** (sleep mode). After these 5 minutes, the PIR sensor then returns to watching out for movement until re-triggered.

**After setting up, switch the DIP switch no. 4 back to the NORM position!**

## Detection characteristics

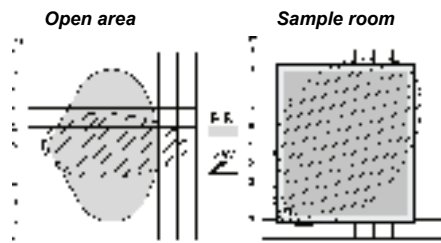



Figure 2: Detection characteristics of PIR and MW coverage in an open area and sample room

## Technical parameters

Power supply	Lithium battery type CR14500 (AA) 3.6 V / 2.45 Ah Please note: Battery is not included
Quiescent current consumption	21 µA
Maximal current consumption	38 mA
Low battery voltage	≤2.6 V
Typical battery lifetime	approx. 2 years (DIP no. 3 to NORM)
Communication frequency	868.1 MHz, Jablotron protocol
Communication range	approx. 300 m (open area)
Maximum radiofrequency power (ERP)	<25 mW
Recommended installation height	2.5 m above floor level
PIR detection angle / detection range	110° / 12 m (with basic lens)
MW detection angle / detection range	24° / 15 m (open area without reflections)
MW detection range/frequency	9.35 GHz
Dimensions	110 x 60 x 51 mm
Weight	114 g
Classification	security grade 2 / environmental class II
Operational environment	Indoor general according to EN 50131-1
Operational temperature range	-10 °C to +40 °C
Average humidity	75% RH, non-condensation
Certification body	Trezor Test s.r.o. (no. 3025)
Complies with	EN 50131-1, EN 50131-2-4, EN 50131-5-3, ETSI EN 300 220-2, ETSI EN 300 440-1, EN 50131-6, EN 50130-4, EN 55032, EN 62368-1
Can be operated according to	ERC REC 70-03
Recommended screw	2x  ø 3.5 x 40 mm (countersunk head)
We recommend that you familiarize yourself with the terms and conditions set by local telecommunications authorities.	

This detector must not be used in Great Britain as this frequency band is allocated for radar level measurements applications. In Russia, the e.i.r.p is limited to 13 dBm (approx. 20 mW)



JABLOTRON a.s. hereby declares that the JA-180W is in a compliance with the relevant Union harmonisation legislation: Directives No: 2014/53/EU, 2014/35/EU, 2014/30/EU, 2011/65/EU. The original of the conformity assessment can be found at [www.jablotron.com](http://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.

For the electronic version of this document (which is also available in other languages) or the version for installation in a JABLOTRON 100+ system, please scan the QR code.



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