JA-150IR wireless optical barrier

The JA-150IR optical barrier is designed for the indication of a breach into a protected area by crossing the IR line between the transmitter and the receiver. The barrier is a product AX-200TFR by Optex supplemented with transmitters JA-150TX-V4 produced by JABLOTRON ALARMS compatible with the JABLOTRON 100 system, this being both in the transmitting and receiving part of the barrier. The device is equipped with a 2-ray optical part with a high immunity against false alarms and the detection of small animals. The barrier occupies two positions in the system. Both parts of the barrier can send a tamper signal to the control panel. The transmitters regularly perform automatic tests and report their status to the system. The barrier should be installed by a trained technician with a valid certificate issued by an authorized distributor.

Barrier installation

The following instructions should be observed when selecting a place for barrier installation:

- Both units must be installed onto a stationary construction (e.g. a wall or a thick post) at the same height and should face each other.
- The area between the barrier units must not be blocked by any bushes or tall grass.
- There can be up to a 60 m distance between the units indoors. (The distance could be reduced outdoors.)
- The receiver unit must not be affected by direct sunlight.
- The units should be installed 0.7 – 1 m above the ground.
- If the IR beam is parallel to a wall, there must be at least a 1 m distance between the beam and the wall.
- If multiple barriers are used, it is necessary to set up a different channel (1-4) for each barrier. DIP switches for channel setup are on the side of the receiver and transmitter.

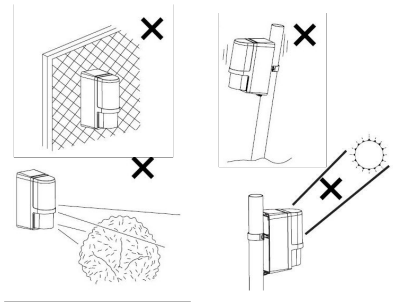


Fig. 1: Undesirable locations

Installation steps:

The transmitting unit (marked TRANSMITTER) and the receiving unit (marked RECEIVER) are of identical mechanical construction.

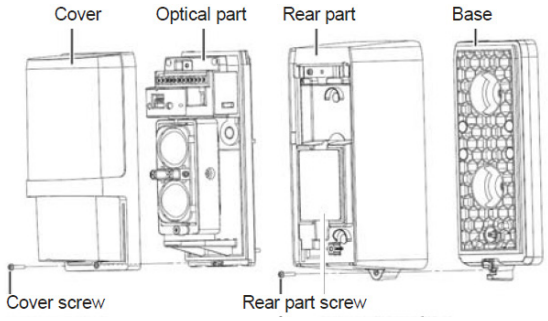


Fig. 1: Barrier parts (identical for transmitter and receiver)

1. Unscrew the rear part screws and remove the unit bases.
2. Install the bases onto the selected places, either directly on a surface (wall) – in such a case punch the holes through the base for the screws – or onto a post 43-48 mm in diameter using the supplied clips. See figure 3.
3. When installing the base always check whether the rubber tamper contact pin is functional.

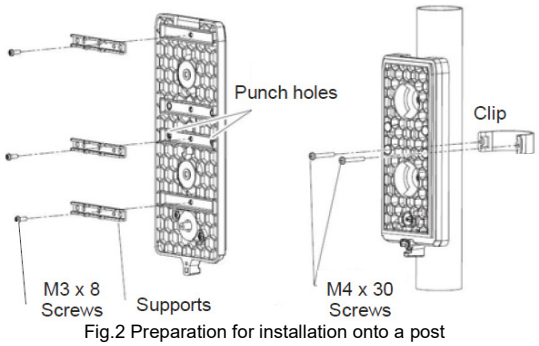


Fig.2 Preparation for installation onto a post

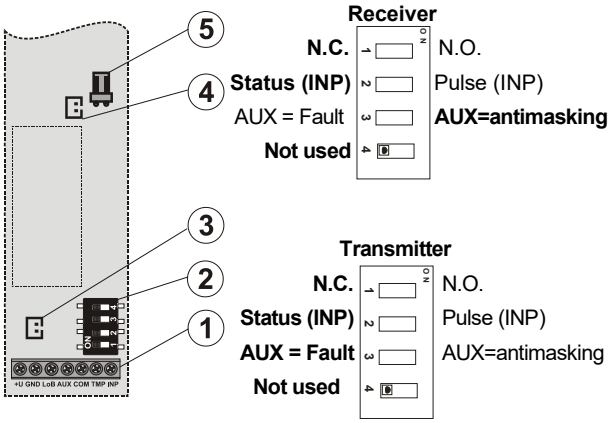
4. Enroll the transmitters into the system – see the following chapter.

Enrolling the barrier transmitters into the system

1. There must be a JA-110R radio module installed in the system.
2. Go to the ***F-Link*** software, select the required position in the ***Devices*** window and launch the enrollment mode by clicking on the *Enroll* option.
3. Insert the batteries (mind the correct polarity). The enrollment signal is transmitted when the first battery is inserted into the detector.
4. Perform optical adjustment and unit transmitter settings.
5. Screw the upper covers back in and test the barrier functioning.

Note:

- The transmitters for wireless communication are located in the rear part underneath the optical section.
- The barrier occupies two positions in the system
- Barrier activation is reported by the receiving part of the barrier (the position where its radio transmitter is enrolled in the system).
- Both parts of the barrier can send a tamper signal to the control panel.
- **Always use two SAFT LSH20 lithium batteries** (they are not included in the package). The batteries should be inserted very carefully to avoid damage to the transmitter wiring.



Factory settings highlighted by bold letters.

Fig. 3: Radio transmitter JA-150TX-V4 (matched transmitter and receiver): 1 – terminals, 2 – option DIP switch (pre-set from factory), 3 – external tamper connector, 4 – external antenna jumper, 5 – external antenna connector

If needed the transmitter can be equipped with an AN-868 (2PIN) external antenna connected to the connector (5) and disconnect the jumper (4).

Setting up the optical part of the barrier

The optical part of the barrier must be adjusted so that the optical parts facing each other are physically aligned. Both units are equipped with adjusting elements for the adjustment of direction and a viewfinder for precise adjustment. The unit opposite the one you want to adjust must be in the center of the aiming cross and the cross must be in the center of the view-finder.

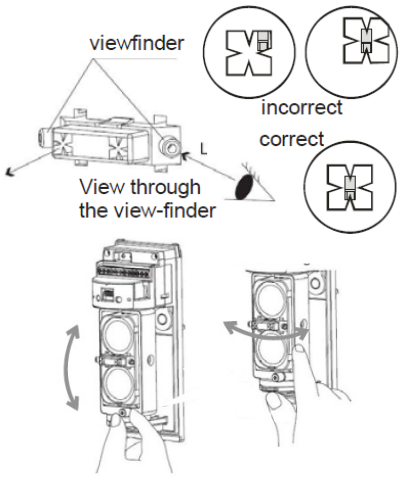


Fig. 4: Setting up the optical part

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When the setting is complete, it is followed by adjustment of the receiver unit:

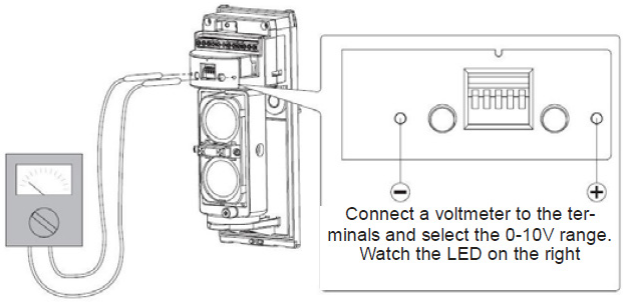


Fig. 5: Setting up using a multimeter

A permanently lit LED on the right indicates that the beam has been interrupted (or wrongly adjusted). The better the beam reception, the longer the breaks between the LED flashes. When the LED stops flashing, continue looking for the ideal position indicated by the highest voltage measured on the voltmeter (see Fig. 5).

Setting up the electronic part of the barrier

Both units are equipped with settings switches. The switch located on the side of the units (on the optical part) allows barrier beam modulation frequency adjustment from 1 to 4. This setting is useful only for a combination of multiple JA-150IR barriers where a problem with interference might appear.

There is a DIP switch with five switches. The first two positions are used to set the reaction time to an interruption of the beam. The shorter the time, the more precise the interruption detection, but also the greater the susceptibility to false alarms during worsened optical conditions (snow, fog, …).

Note: When the strength of the beams is reduced (to less than 50%) for more than 20 sec, the IR beam sends a fault to the control panel.

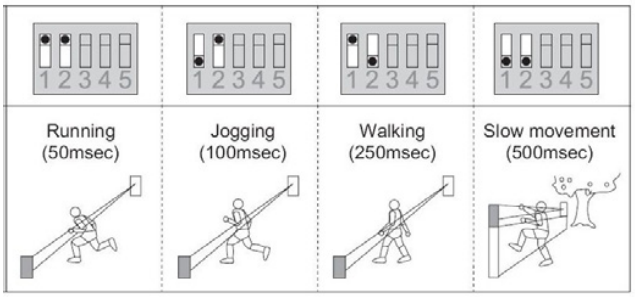


Fig. 6: Reaction time setting

It is possible to set a 2-minute sleep time after an alarm (beam interruption) in order to save batteries. This setting is done by switching switch no. 3 (receiver unit) and no. 1 (transmitter unit) to the ON position. Switches 4 and 5 (receiver unit) and 2 and 3 (transmitter unit) are set as a default and you should leave them in the OFF position for the correct functioning of the device.

Testing

The LEDs on the barrier have the following indication functions:

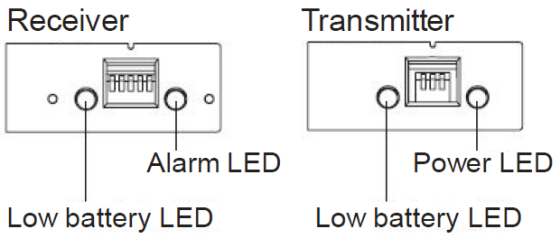


Fig. 7 LEDs on the units

The signal battery low LEDs flash when the batteries in the unit are low. Both batteries (**SAFT LSH20 lithium batteries**) should always be replaced at the same time.

The alarm LED flashes during beam interruption.

The power LED flashes when the battery in the transmitting unit is OK.

Perform a barrier test in three places (A B and C – next to both the units and in the center). The setting is completed only if the barrier reacts successfully in all three positions. You should also check the signal transmission to the system control panel. Only then it is possible to put back the unit covers and secure them.

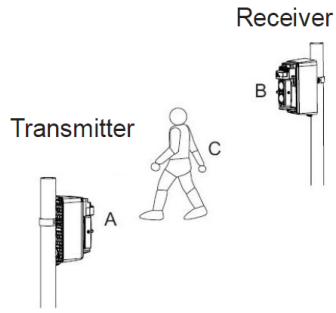


Fig. 8: Barrier function test

Replacing the batteries

The detector checks the battery status automatically. Nearly drained battery is reported by continuous flashing of yellow signaling LED on the detector (1 flash per sec) and at the same time low battery status is reported to the control panel. The detector remains fully functional. The battery should be changed as soon as possible.

The control panel must be in service mode **before battery changing** (see the control panel installation manual). Tamper contact must be pressed several times after opening the cover and removing the battery to discharge capacitors. We recommend to use lithium batteries SAFT LSH20 (3.6 V 13 Ah). Always replace all batteries simultaneously.

Technical specifications

Power	*4 x LSH20 type lithium batteries (3.6 V/13 Ah)*
	Please note: Batteries are not included
Current consumption (nominal/maximal)	*830 µA/50 mA*
Average battery lifetime	*app. 3 years (with 120 s energy saving mode)*
Communication band	*868.1 MHz, JA-100 protocol*
RF range	*up to 300 m (open area)*
Optex barrier parameters	
Product dimensions	*88.1 x 217 x 162.5 mm*
Mounting holes distance	*83.5 mm*
Distance (max.) between the barrier units	*max. 60 m*
Barrier installation height	*0.7 – 1.0 m*
Object motion speed	*as set by an installer*
Detector cover conformance	*IP55*
Max. relative humidity of the environment	*95 %*
Weight	*1620 g*
Operational environment according to EN 50131-1	*IV*
Operational temperature range	*-20 °C to +60 °C*
Security grade	*according to OPTEX*
Complies with	*ETSI EN 300220, EN 50130-4, EN 55022, EN 60950-1, EN 50581*

JABLOTRON a.s. hereby declares that the JA-150IR composed of Optex detector AX-200TFR and radio module JA-150TX-V4 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 - 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.