# intelbras IVA 3070 X Active Infrared Barrier Sensor User Manual



Contents

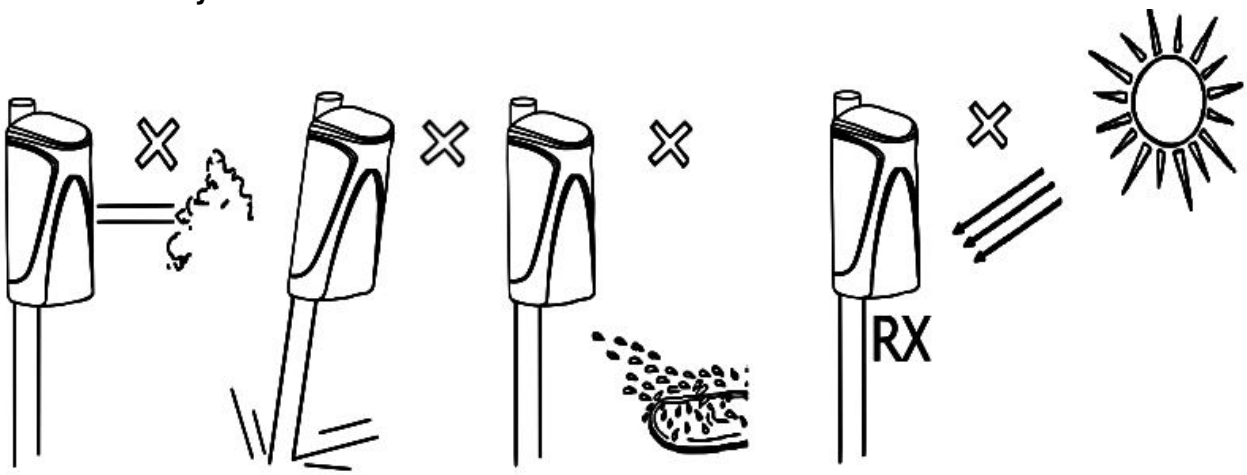


## intelbras IVA 3070 X Active Infrared Barrier Sensor


## IVA 3070 X and IVA 3110 X Sensor

Congratulations, you have just purchased a product with Intelbras quality and safety.
The IVA 3070 X and IVA 3110 X sensors have Automatic Signal Gain Control (AGC) and a Fresnel lens, which guarantee a strong and stable signal. They offer efficient detection via dual pulsed infrared beams and can be powered with either a DC or AC source. Read the introductory product information presented in this manual carefully for the correct use of the sensors.

## Care and security



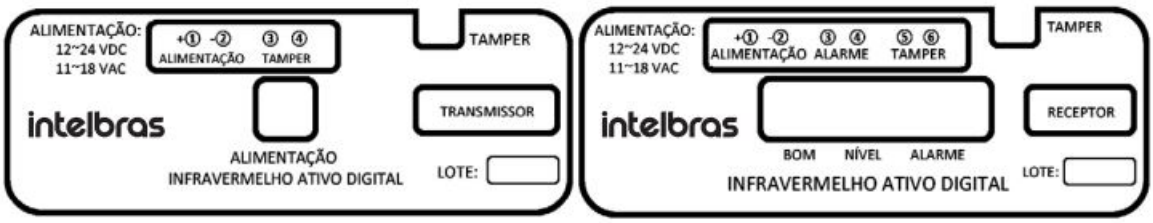

- Do not install the sensor in areas exposed to strong winds where objects such as trees, signs or hanging clothes may interfere with the operation of the detector.
- Avoid installing the sensor close to objects that can cause changes in temperature.

- Do not install the receiver facing the sun.
- Remove any object in front of the detector lens.
- Install the sensor in a stable location that is not subject to flickering.
- Do not install the sensor in locations that are prone to the formation of puddles of mud or dirty water that may splash on the sensor lens.
- To clean the outside of the sensor, use a cloth moistened with water, never use chemicals.
- The sensor must be attached well so that the beams do not misalign over time.
  In outdoor environments with a high rate of fog or rain, install the sensors at a maximum of 50% of the distance specified for each model, in order to avoid false alarms. It must be kept in mind that the distance between the sensors will depend on the density of the fog. At short distances the effect of multiple reflections is higher. So it is extremely important to make sure that the beam can be interrupted when the sensors cross. Otherwise, there may be no triggering of alarms.
- LGPD – General Law for the Protection of Personal Data: Intelbras does not access, transfer, capture, or perform any other type of treatment of personal data from this product.

### Technical specifications

| **Model** | | **IVA 3070 X** | **IVA 3110 X** |
|---|---|---|---|
| Range | External | 70 m | 110 m |
| | Internal | 190 m | 310 m |
| Beam characteristics | | Dual pulsed infrared beam | |
| Detection method | | Detection by simultaneous obstruction of the beam | |
| Response time | | 50 – 1400 ms | |
| Alarm Period | | ≥2s depending on the beam obstruction time | |
| Alarm output (relay) | | Configurable relay output NO / NC (Form C – AC / DC: 30 V and 0.5 A ) | |
| Power supply voltage | | DC: 12 – 24 V AC: 11 ~ 18V | |
| Current consumption | | ≤ 55 mA @ + 12 Vdc<br>≤ 55 mA @ + 11 Vac | ≤ 65 mA @ + 12 Vdc<br>≤ 65 mA @ + 11 Vac |
| Operating temperature | | -10 to 55°C | |
| Tamper switch | | NC (normally closed), opens when the cover is removed | |
| Adjusting the optical axis | | ± 12 ° vertical; ± 90 ° horizontal | |
| Dimensions (B × W × D) | | 82 × 175 × 85 mm | |
| Weight | | 300 g | |
| Protection rating | | IP54 | |
| Color | | Black | |

## LED indicators



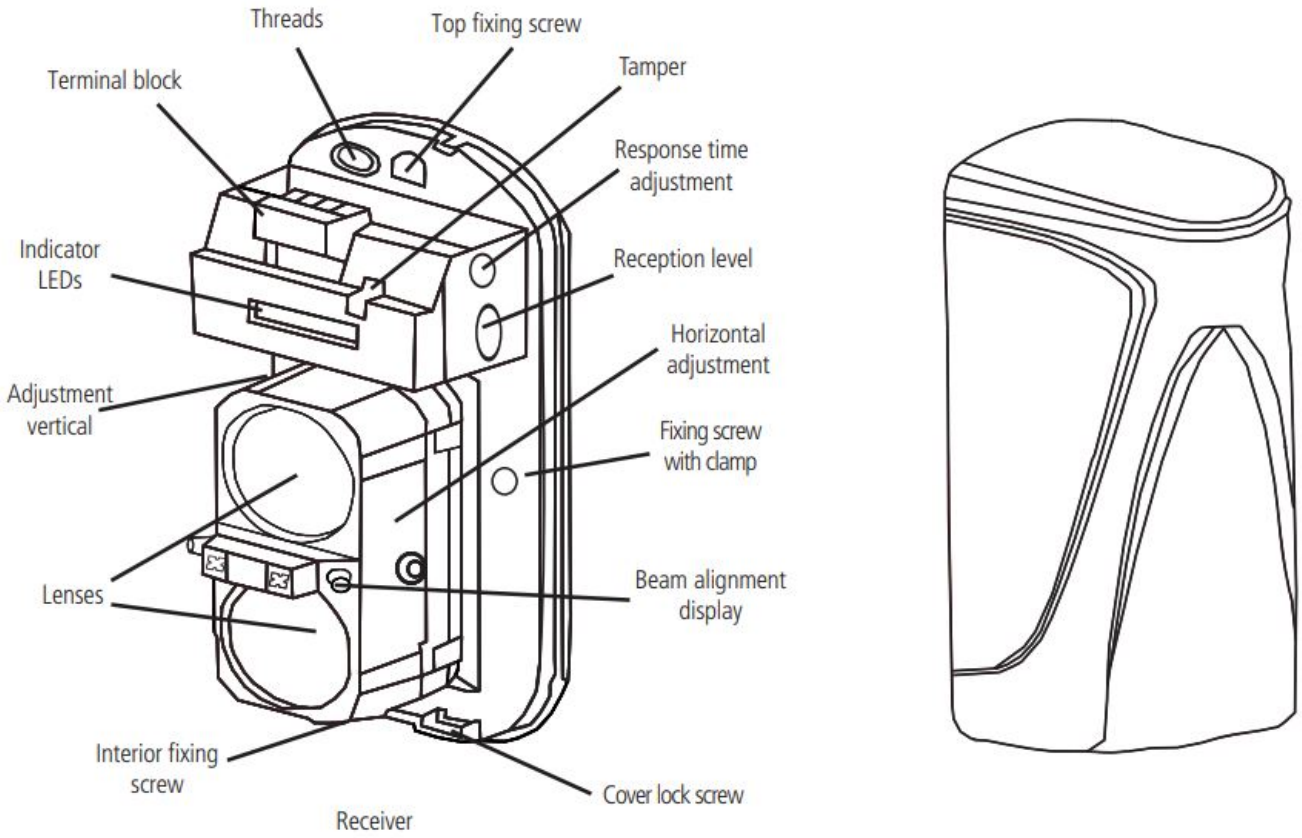

**Receiver:**

- **Level (orange):** the brightness of the LED varies according to the incident signal level on the receiver. When only the orange LED is lit, the receiver will be misaligned. When, in addition to the orange LED, the green (Good) LED is lit, the alignment is good.
- **Good (green):** when lit, it indicates that the beams are aligned. When off, it indicates that the sensor needs better alignment (even if the Level LED is lit). Use the voltmeter to get the best fit.
- **Alarm (red):** when lit, it indicates alarm triggering, blocked beams.

**Transmitter:**

- **Power (green):** when lit, it indicates that the sensor is powered on and ready to transmit/receive.

## Product




## Installing the sensors

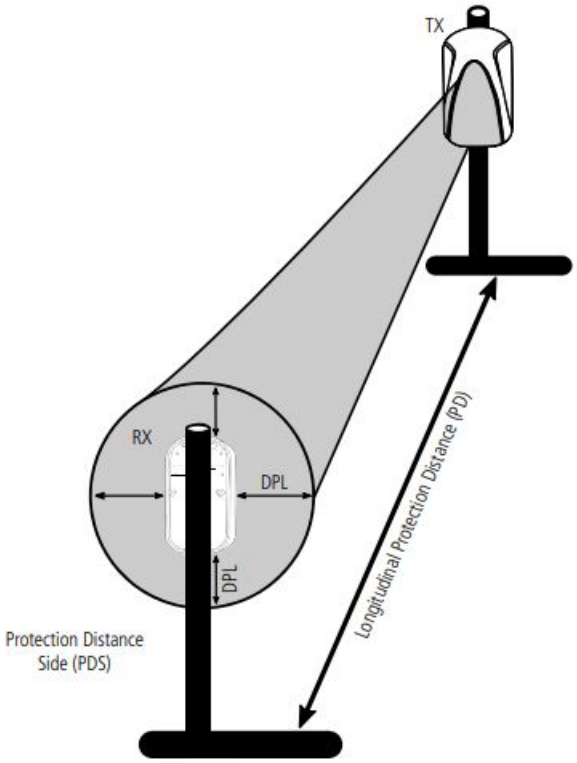
The IVA 3070X and 3110X sensors can be installed at a distance of 100 m from the panel, however, the ohmic characteristics of the cable being used must be taken into account as well as the characteristics of the panel area.

Longitudinal protection distance and lateral protection distance

| No fog | | | With fog | |
|---|---|---|---|---|
| **Model** | **Longitudinal protection distance** | **Side protection distance** | **Longitudinal protection distance** | **Side protection distance** |
| IVA 3070 X | 70 m | 5 m | 35 m | 2.5 m |
| IVA 3110 X | 110 m | 8 m | 55 m | 4 m |

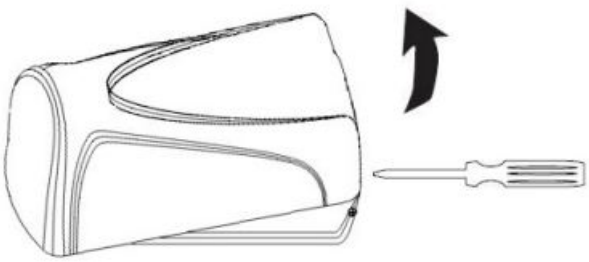
**Note:** this sensor has high immunity to false triggering with fog, however, triggering can occur depending on the density of the fog or fog in the environment.
If the longitudinal protection distance is different from that shown in the table above, use the formula below to calculate the side protection distance.

- DPL = Side protection distance
- DP = Longitudinal protection distance
- DPL = SD × 0.072



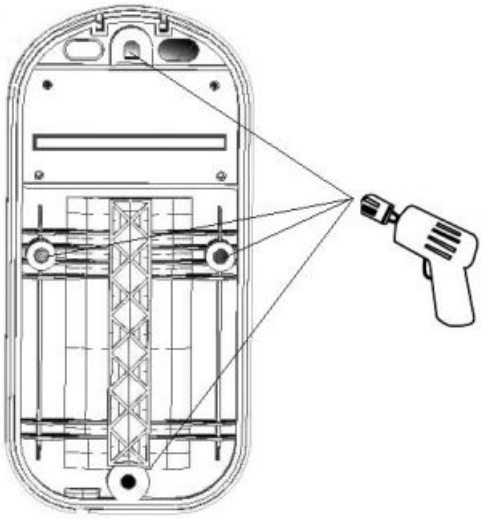

**Wall installation**

1. Loosen the screw and remove the front cover;



2. 2. Mark the installation holes and drill the guide holes. Side or top / bottom holes can be used for wall mounting

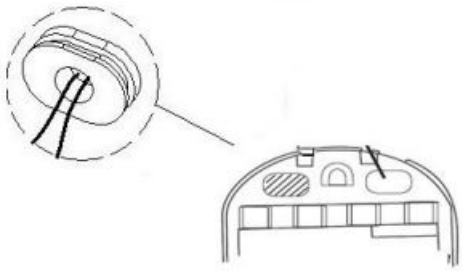
as shown in the figure below;



**Note:** M4 × 25 perforating screw.

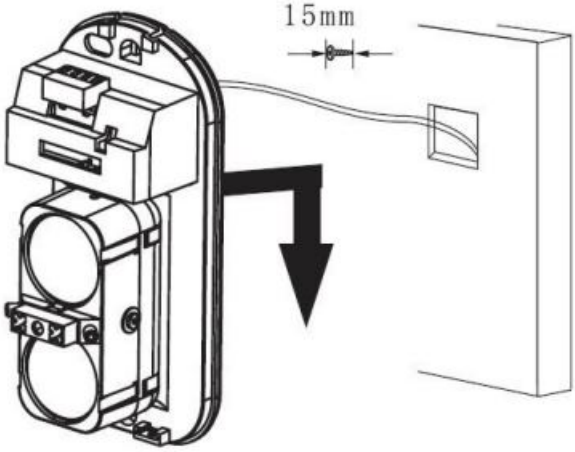
If you are going to use the top and bottom hole do not remove the rubber film it is a guarantee of sealing against water and insects, use the screw itself to tear it.

3. Tear the rubber film on the back of the sensor and pass the wires through the hole;

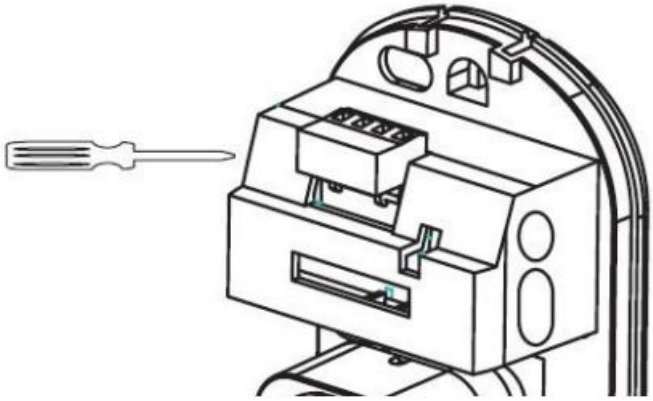


**Note:** Do not remove the rubber film it is the guarantee of sealing against water and insects.

4. Mount the sensor on the wall.

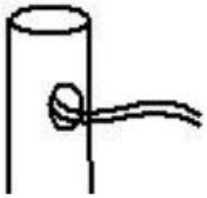



5. Connect the wires to the terminal according to the figure on the terminal block.

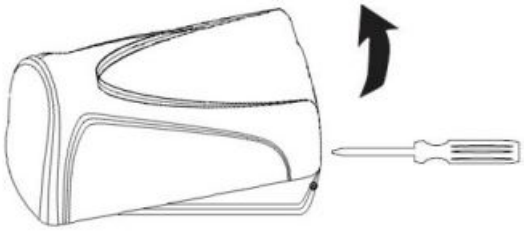


**Pole installation**

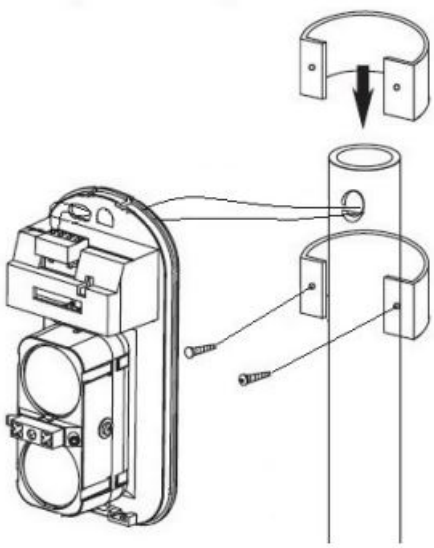
1. Pass the wires through the hole and then pull them out;



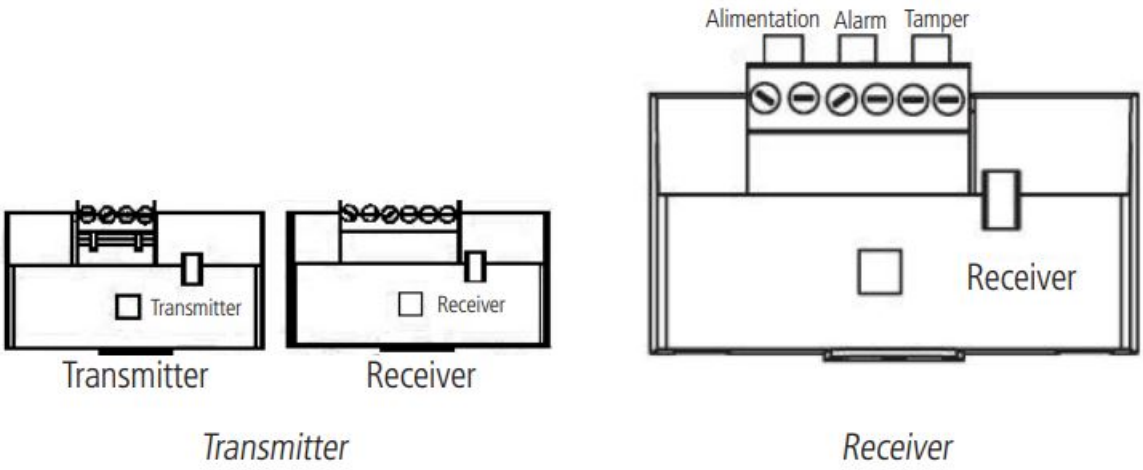
2. Remove the cover;



3. Attach the base to the support as shown in the figure below. The base of this sensor has a suitable design for connection to a pole.



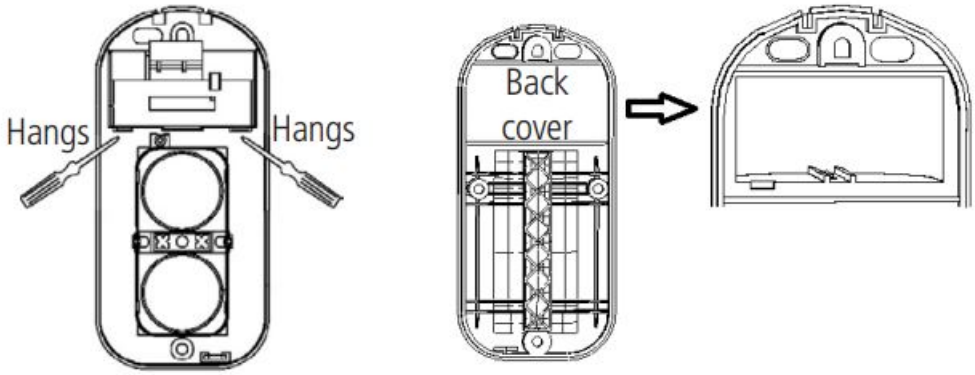
**Terminals**




IVA sensors can be used in conjunction with the Intelbras family of alarm panels. To connect these sensors to our line of alarm panels, follow the steps:

- Supply the sensor with an external power supply DC 12 ~ 24 V or AC 11 ~ 18 V. If you do not have a source, use the auxiliary output of our control units;
- Connect the ALARM output of the receiver to a corresponding terminal of the zone/sector alarm panel.

The relay output of the receiver can be configured via jumper in NC (normally closed) or NO (normally open). Adjustment is available on the rear of the jumper receiver plate (JP1).
**Note.:** factory default: NC Normally closed
To change the jumper (JP1), open the receiver with the help of a screwdriver and unlock the rear cover.

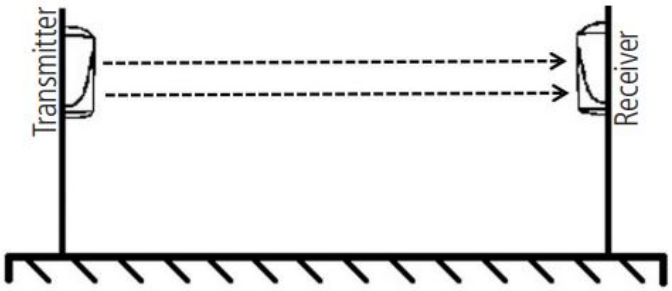


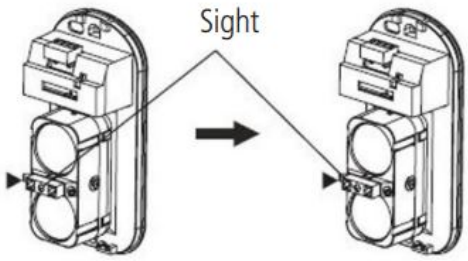

**Wiring/power ratio**

Note: variations in the sensor power input may occur due to the internal resistance in the cable being used. Always check at the sensor input if the supply voltage is between 12 – 24 Vdc or 11 ~ 18 Vac.

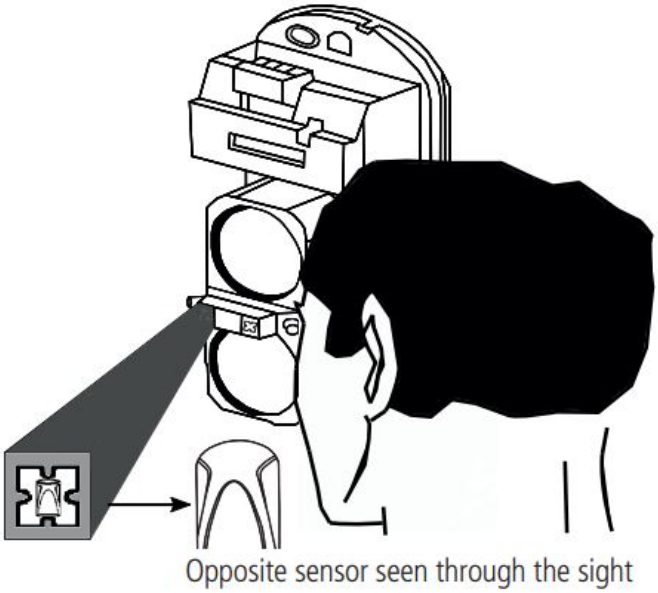
## Beam alignment

1. Position the transmitter and receiver so that they are aligned and cover the area you want to protect. Remove the front cover and power on the transmitter and receiver;




2. Observe the other sensor through the holes located near the sights. The first adjustment must be visual, try to leave the opposite sensor centered in the sight of the other sensor, as shown in the figure.
   **Note:** use a voltmeter to achieve a better adjustment – the higher the voltage level at the receiver output, the stronger the signal level -, preventing false alarms caused by medium interference.

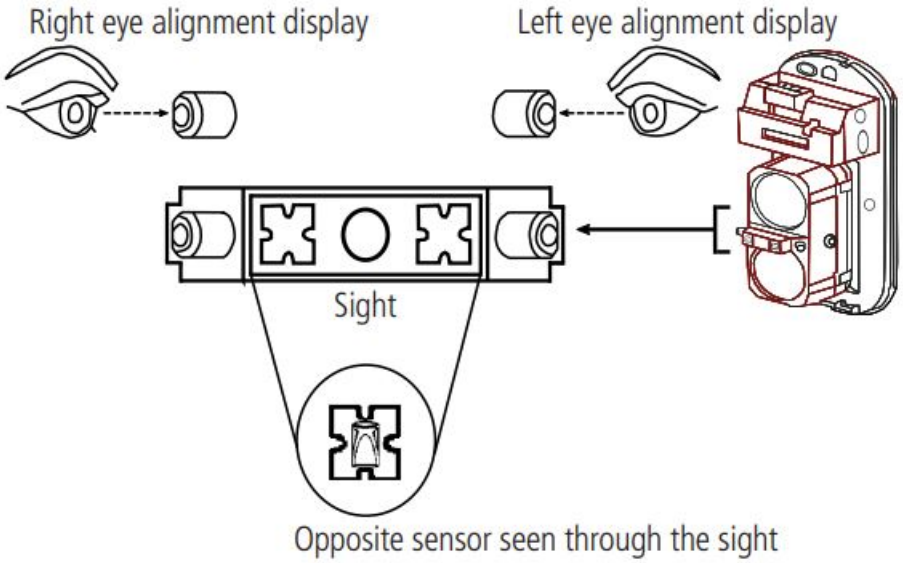



The desirable voltage values must be between 3 and 4 Vdc.

- Visual adjustment is considered “coarse adjustment” due to the fact that the small mirrors used in the sensor sights may be slightly misaligned.
- The adjustment considered “fine” is made through the voltage level and must be considered together with the indication LEDs as a reference for a good alignment.

**Beam alignment display**

The alignment display is used with a crosshair to adjust the sensors. The first step in aligning the sensors is to see if the opposite sensor is centered within the sight. Look at the figure.




1. Adjust the vertical angle adjustment screw (figure A) and the horizontal angle adjustment bracket by holding it at the top as shown in (figure B). In this way, it will be possible to obtain greater precision in the adjustment. Do this at the receiver and transmitter. The Good LED should be on. Improve beam adjustment if the Good LED is not lit.

   **Note:** use a voltmeter to achieve a better adjustment – the higher the voltage level at the receiver output, the stronger the signal level -, preventing false alarms caused by medium interference.

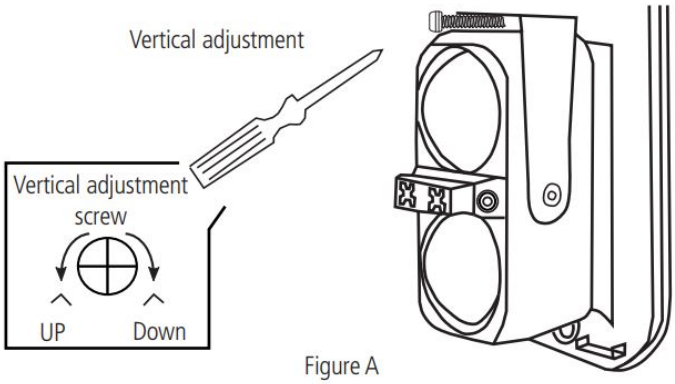



Figure A

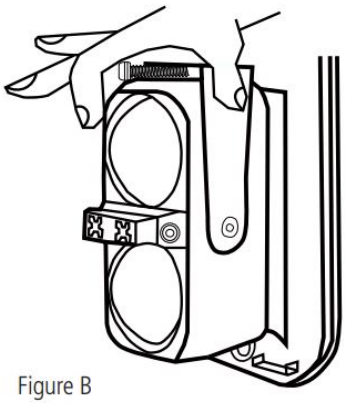
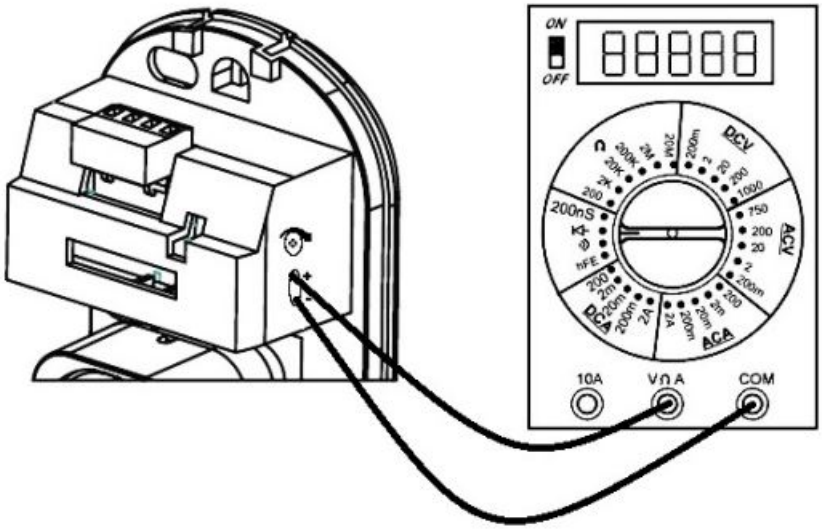


Figure B

**Beam adjustment by reception level (receiver only)**



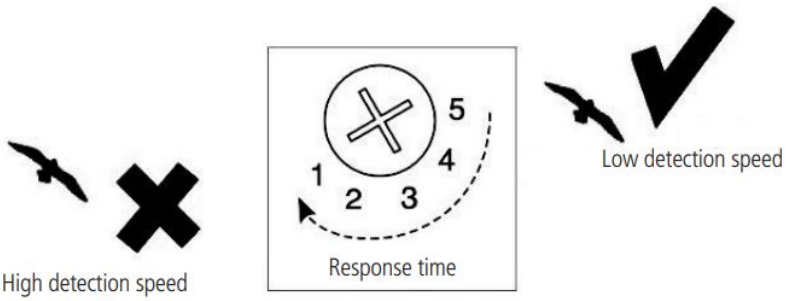
1. Set the multimeter to the DC voltage scale and insert the tips into the test terminals (RECEPTION LEVEL) on the receiver, obeying the polarity;
2. Adjust the horizontal angle and the vertical angle until the test terminal voltage rises to the maximum;
3. Check the alignment table (located inside the front cover of the receiver) for the voltage levels indicated for each type of environment. Higher voltage levels ensure smooth operation and prevent false triggering, caused by fog and other climate changes. The desirable voltage values must be between 3 and 4 Vdc.

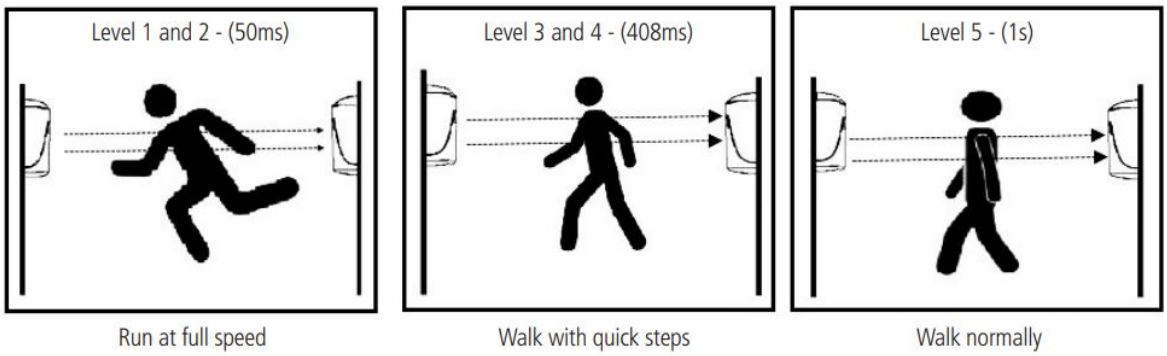
## Tests

After installation, confirm correct operation by testing the beam cut. Block the beams with your hand or some screen and check if the receiver triggers by observing the alarm signal by the LEDs, as shown in the following table:

| | Condition | Indication |
|---|---|---|
| Transmitter | Broadcasting | Green LED on |
| Receiver | Alignment OK | Good (green) and Level (orange) LEDs on |
| | Alarm | Alarm LED (red) on |

**Response time adjustment (receiver only)**
Adjusts the interruption period by setting the speed level. Level 1 is the highest speed and level 5 is the lowest speed. Factory default: level 3. It must be kept in mind that in outdoor environments birds can cut the beams and cause false alarms. Therefore, adjust the response time so that the sensor does not detect a bird, but is able to detect an intruder. Do the simulation by cutting the beams by hand at different speeds.




## Frequently asked Questions

| Question | Possible cause | Solution |
|---|---|---|
| The transmitter LEDs do n ot light | Inadequate voltage | Check power and cables |
| Receiver LEDs do not ligh t | Inadequate voltage | Check power and cables |
| The receiver's alarm LED does not light up, even wh en the beams are blocked | The beams are being reflected to the re ceiver by another object | Remove the reflecting object or change t he direction of the beam |
| | The beams were not cut simultaneously | Cut both beams simultaneously |
| | Very short beam cutting time, less than the response time | Decrease response time |
| When the beams are blocked, the receiver's LE D lights up, but the alarm does not go off. | Shorted wiring. | Check wiring and connection to the cont rol panel |
| | The connection is not adequate | Check wiring and connection to the cont rol panel |
| The alarm LED on the rec eiver is always on. | The beams are not properly aligned | Adjust the beams |
| | There are barriers between the transmi tter and the receiver | Remove barriers |
| | The cover or optical parts are dirty | Clean the optical parts with a soft cloth |
| Intermittent buzz | Inadequate wiring | Check the Wires |
| | Floating power / voltage | Check the power |
| | There are barriers between the transmi tter and the receiver | Remove possible barriers or change the installation position |
| | Unstable installation base | Solidify the base |
| | Blocking by other moving objects | Adjust the beam |
| | Inadequate alignment, low signal level | Adjust the response time or change the i nstallation position |

## Warranty term

It is established that this warranty is granted upon the following conditions:

Client's name:
Client's signature:
Invoice number:
Date of purchase:
Model:
Retailer:
Serial number:

1. All the parts, pieces and components of the product are guaranteed against possible manufacturing defects, which may arise, for the term of 1 (one) year – this being 90 (ninety) days of legal warranty and 9 (nine) months' contractual war-ranty –, counting from the date of purchase of the product by the Consumer, as

appears in the product purchase bill of sale, which is an integral part of this Term throughout the domestic territory. This contractual warranty includes the free exchange of parts, pieces and components which have a manufacturing defect, including the expenses with labor used in this repair. If there is no manufacturing defect, but defect(s) arising from misuse, the Consumer shall bear these expenses.

2. The installation of the product shall be executed in accordance with the Product Manual and/or Installation Guide. If your product requires the installation and configuration by a qualified technician, seek a suitable specialized professional, the costs of these services not being included in the product amount.
3. Having perceived the defect, the Consumer shall immediately contact the nearest Authorized Service which appears in the report offered by the manufacturer – they are the only ones authorized to examine and remedy the defect during the warranty term foreseen herein. If this is not respected, this warranty shall lose its validity, as it shall be characterized as product infringement.
4. If the Consumer requests home service, it shall contact the nearest Authorized Service to inquire about the technical visit rate. If it is necessary to remove the product, the ensuing expenses, such as those of transportation and insurance of the taking and return of the product, shall be the Consumer's responsibility.
5. The warranty shall lose its validity totally in the occurrence of any of the following cases: a) if the defect is not one of manu-facture, but is caused by the Consumer or by third parties foreign to the manufacturer; b) if the damage to the product arises from accidents, disasters, agents of nature (lightning, floods, landslides, etc.), humidity, voltage in the electrical network (excess voltage caused by accidents or excessive fluctuations in the network), installation/use in disagreement with the user's manual or arising from natural wear of the parts, pieces and components; c) if the product has undergone effects of a chemical, electromagnetic, electrical or animal (insects, etc.) nature; d) if the serial number of the product has been falsified or erased; e) if the appliance has been infringed.
6. This warranty does not cover loss of data; therefore, it is advisable that if it is the case of the product, the Consumer makes a backup regularly of the data which appears in the product.
7. Intelbras is not responsible for the installation of this product, or for possible attempts at fraud and/or sabotage in its products. Maintain the updates of the software and applications used up-to-date, if it is the case, as well as the network protection required for defense against hackers. The equipment is guaranteed against defects in its usual conditions of use, it being important to bear in mind that, as it is electronic equipment, it Is not free of fraud and scams which may interfere with its correct functioning.
8. After its useful life, the product must be delivered to an authorized Intelbras service center or directly disposed of in an environmentally appropriate manner to avoid environmental and health impacts. If you prefer, the battery, as well as other unused Intelbras brand electronics, can be disposed of at any Green Eletron collection point (waste management facility to which we are associated). If you have any questions about the reverse logistics process, please contact us at (48) 2106-0006 or 0800 704 2767 (Monday to Friday 8am to 8pm and Saturdays 8am to 6pm) or via -mail **support@intelbras.com.br**

These being the conditions of this complementary Warranty Term, Intelbras S/A reserves the right to alter the general, technical and esthetic features of its products without prior notice.
The manufacturing process of this product is not covered by the requirements of ISO 14001. All the images of this manual are illustrative.

## Talk To us

- Customer Support: (48) 2106 0006
- Forum: **forum.intelbras.com.br**

- Support via chat: **intelbras.com.br/suporte-tecnico**
- Support via e-mail: **suporte@intelbras.com.br**
- Customer Service: 0800 7042767
- Where to buy? Who installs it? 0800 7245115
- Imported to Brazil by: Intelbras S/A – Indústria de Telecomunicação Eletrônica Brasileira Rodovia SC 281, km 4,5 – Sertão do Maruim – São José/SC – 88122-001
- CNPJ 82.901.000/0014-41 – **www.intelbras.com.br**

## Documents / Resources

| | |
|---|---|
|  | **intelbras IVA 3070 X Active Infrared Barrier Sensor** [pdf] User Manual<br>IVA 3070 X, IVA 3110 X, Active Infrared Barrier Sensor |

## References

- **Fórum Intelbras - Índice**
- **Ajuda e Downloads**
- **Intelbras | Segurança eletrônica, Redes, Comunicação e Energia**