intelbras

User manual

IVA 7100 Dual
IVA 7100 Quad
IVA 7100 Hexa
IVA 7100 Octa

intelbras

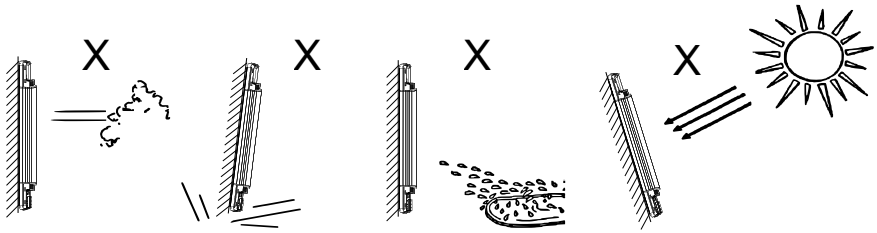
IVA 7100 Dual, Quad, Hexa and Octa
Active infrared sensor

Congratulations, you have just purchased a product with Intelbras quality and safety.

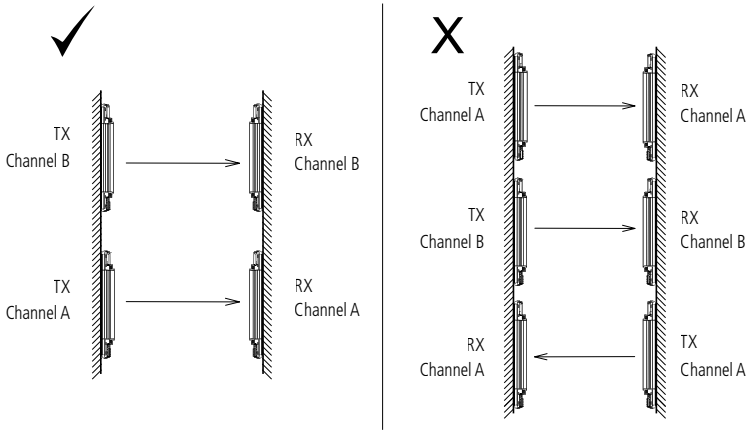
The IVA 7100 Dual, Quad, Hexa and Octa multi-beam sensor family was designed to provide an infrared barrier capable of covering a larger area (height × length of the barrier). These sensors can be installed indoors, semi-open and outdoors without degradation of functioning, that is, without causing unwanted triggering. The cross-beam infrared technology employed in these sensors increases security by making it difficult to circumvent them. Read the product introductory information carefully for the correct use of the sensors.

Care and safety

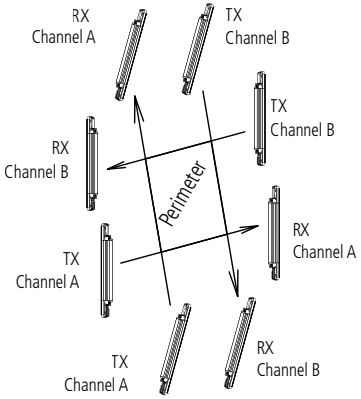
- » Install the sensor in a stable location that is not subject to flickering.
- » Install the transmitter and receiver so that they are aligned;
- » LGPD - General Law for the Protection of Personal Data: Intelbras does not access, transfer, capture, or perform any other type of treatment of personal data from this product.
- » Do not install the sensor in locations where beam obstruction may occur. Check that there are no plants, branches or other objects that could obstruct the sensor beam;
- » Do not install the receiver and transmitter with the lens facing the sun;



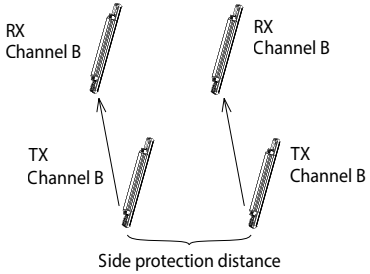
- » Make sure that the cable input side faces down to prevent water from entering;
- » Size the power supply and power cord correctly;
- » Do not leave the cable exposed to the sun, rain or moisture;
- » Do not install the sensor above the recommended distance;
- » Always check that there are no reflections on clear and polished surfaces, which can prevent the sensor from triggering. Do walking tests in different positions along the barrier to make sure there are no reflections;
- » Use the sealing rubber correctly to prevent insects from entering the sensor;
- » To clean the outside of the sensor, use a cloth moistened with water; never use chemicals.
- » For installation of stacked sensors, the maximum number of sensors installed is 2 (two) and they must be in different frequency channels, as shown in the image below. If a larger coverage area is required, use sensors with more beams;
- » Avoid installing the receiver near sources of electromagnetic noise. After installation, perform tests to verify the correct functioning of the product. In case of interference, exchange the Transmitter with the Receiver;



» For installing sensors in perimeters, always follow the sensor layout below:



» In order to avoid interference between sensors on the same channel, respect the side protection distance as specified below.



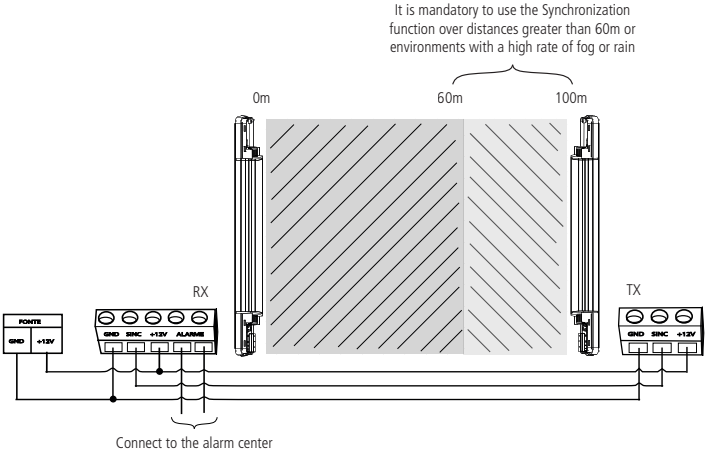
	Distance between TX and RX			
	25 m	50 m	75 m	100 m
Side Protection Distance (DPL)	> 2.5 m	> 5 m	> 7.5 m	> 10 m
Vertical Protection Distance (DPV)	Maximum stacking of 2 sensors			

That is, the Side Protection Distance is always the distance between RX and TX divided by 10 (ten).

$$DPL > \frac{\text{Distance between TX and RX}}{10} \text{ [m]}$$

» The *Synchronism* function must be used to increase the robustness of the infrared barrier. It is enabled by removing jumper J2 from the RX and connecting the SINC (Synchronism) terminals of the RX and TX through a standard cable for alarm systems (not supplied with the product).

Note: *if you are using a source to supply the TX and another to supply the RX, you must connect the GND of both sources for the synchronism function to work correctly.*



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. In these places, it is recommended to use the SYNC function *Sync* cable to avoid false triggering.

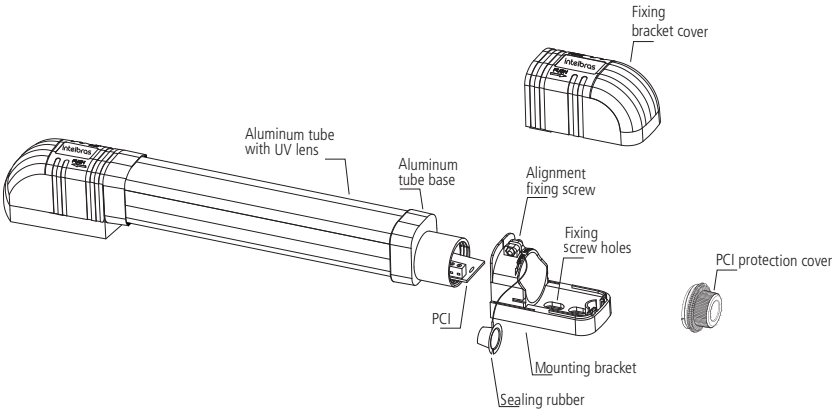
Summary

1. Technical specifications

Model		IVA 7100 Dual	IVA 7100 Quad	IVA 7100 Hexa	IVA 7100 Octa
Number of beams		2	4	6	8
Power supply voltage		12 ~ 18 Vdc			
Consumption current (TX + RX)		≤ 100 mA @ 12 Vdc			
Frequency channels		2 channels, frequencies A and B			
Power Levels		4 levels, Minimum (no jumper), Low (C), Medium (M), High (L)			
Maximum protection distance	WITH SINC Cable (Synchronism)	100 m			
	WITHOUT SINC Cable (Synchronism)	60 m			
Alarm output		Configurable NO / NC output			
		2 A @ 24 Vdc			
Alarm Time		≥ 2s			
Response time		50 ms when blocking 3 or more beams			
		100 ms when blocking 2 beams			
Detection method		Block 2 neighboring beams [1]			
Alignment / trigger indication		LED alignment and buzzer			
Horizontal Alignment		360°			
Tampering		ON and OFF, according to jumper position			
Solar filter for outdoor environments		Yes			
Operating temperature		-10 °C to 55 °C			
IP protection grade		IP65			
Dimensions (B × W × D)		3.8 × 47 × 5	3.8 × 75.5 × 5	3.8 × 107.5 × 5	3.8 × 140 × 5
Weight		0.73 kg	1.1 kg	1.4 kg	1.6 kg

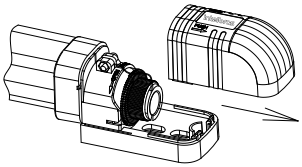
[1] *In the IVA 7100 DUAL model, if the SINC (Synchronism) cable is not connected, it will trip if the upper beam is interrupted individually in both alignment and continuous mode.*

2. Product

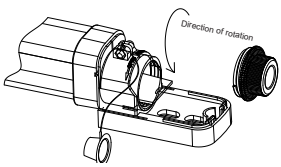


3. Installation

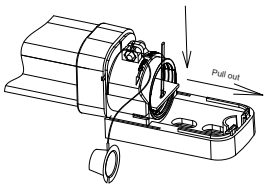
1. For security reasons, it is necessary to open the sensors to identify which is the transmitter and which is the receiver. Below, the step by step to open the sensor cabinet and perform the necessary identification;



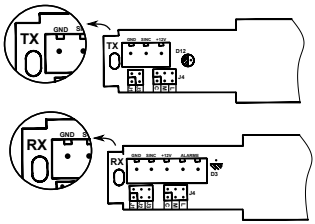
2. Remove the attaching bracket cover by pulling it forward.



2. Remove the sealing rubber and the protective cap from the PCI.

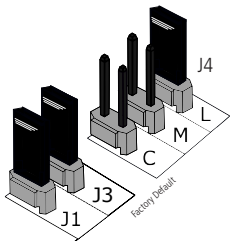


3.Using a tool, pull the PCI out.



4.Observe the silk TX and RX on the edge of the PCI to identify the products.

3. After identification, configure the sensors:

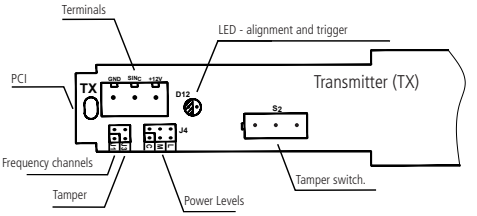


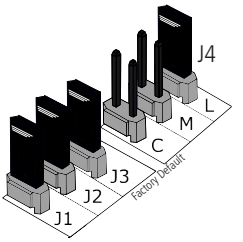
Transmitter

Transmitter

J1	Frequency channels	With Jumper - Frequency Channel A - (Factory default)
		Without Jumper - Frequency Channel B
J3	Tamper	With Jumper - Tamper disabled (Factory default)
		Without Jumper - Tamper enabled
J4	Power [1]	Jumper in L Position - High Power (Factory default)
		Jumper in Position M - Medium Power
		Jumper in Position C - Low Power
		Without Jumper - minimum power (indicated for short distances and with reflection)

[1] It is recommended to use the power jumper always at the highest power (L), this ensures a greater intensity of the infrared signal.



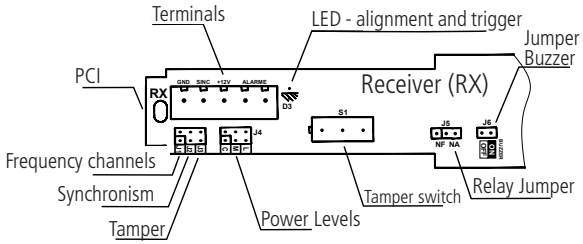


Receiver

Receiver

J1	Frequency channels	With Jumper - Frequency Channel A - (Factory default)	
		Without Jumper - Frequency Channel B	
J2	Synchronism	With jumper - No sync cable is required (Factory default)	
		No jumper - Sync cable required	
J3	Tamper	With Jumper - Tamper disabled (Factory default)	
		Without Jumper - Tamper enabled	
J4	Power [1]	Jumper in L Position - High Power (Factory default)	
		Jumper in Position M - Medium Power	
		Jumper in Position C - Low Power	
		Without Jumper - minimum power (indicated for short distances and with reflection)	
J5	Relay logic	NF	Normally closed relay (factory default)
		NA	Normally Open
J6	Buzzer2	With jumper - Buzzer enabled (Factory default)	
		No jumper - Buzzer disabled	

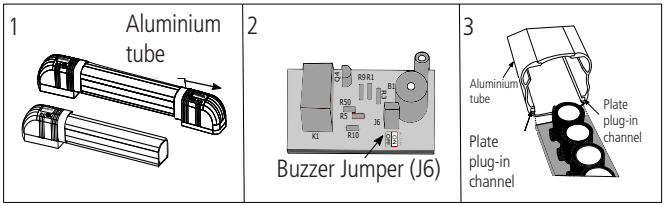
[1] It is recommended to use the power jumper always at the highest power (L), this ensures a greater intensity of the infrared signal.



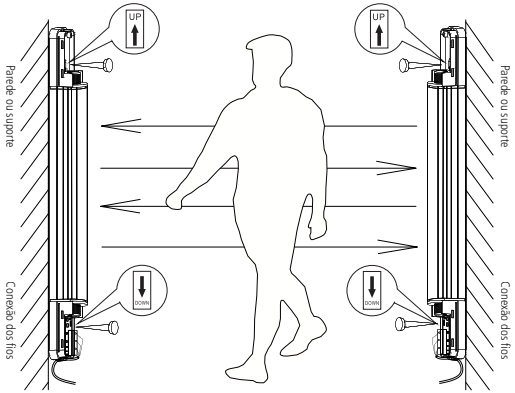
[2] It is necessary to remove the receiver board to access the Configuration Jumper and disable the Buzzer.

Follow the steps below to perform this configuration:

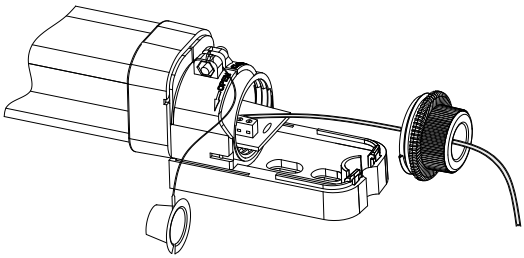
1. Pull the base of the aluminum tube;
2. Remove the board and the Buzzer Jumper (Jumper J6);
3. Place the board back into the aluminum tube while observing the groove and then fit the base of the aluminum tube.



4. With the sensors properly configured, secure the transmitter and receiver so that they are vertically and horizontally aligned. Install the cable entry side facing down. Always install the sensors in a position where the largest number of beams will be interrupted;



5. Pass the cable through the protection indicated below to connect it to the terminal block;

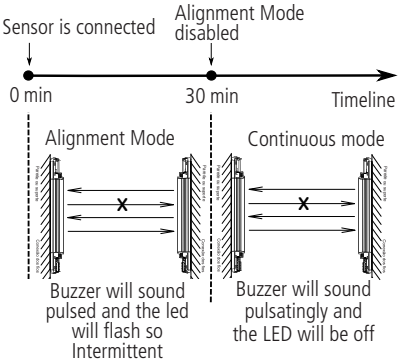


6. Turn on the power according to the polarity indicated on the receiver and transmitter board (12 ~ 18 Vdc). After that, connect the alarm wires to the zone entrance of the control panel;

To perform alignment, the RX sensor (receiver) must be in *Alignment* mode. To enter the *Alignment* mode, simply turn the RX (receiver) off and on, and the sensor will remain in alignment mode for the initial 30 minutes. During this period, when only 1 (one) beam is interrupted, the Buzzer will sound pulsically and the led will also flash in a pulsed manner without causing triggering, indicating that the interrupted beam is aligned. If the Buzzer sounds continuously and the led stays on constantly when 1 (one) beam is interrupted, it is concluded that the sensor is not perfectly aligned. Repeat this procedure for all beams. When 2 (two) or more neighboring beams are interrupted, the sensor will trigger, and the Buzzer will sound continuously and the LED will be on constantly.

After the initial 30 minutes have elapsed, the Buzzer will sound and the LED will only light if 2 (two) or more neighboring beams are interrupted, that is, it will not sound pulsately and neither will the LED flash if it interrupts only 1 (one) beam.

Note: *the Buzzer will not sound if the Buzzer jumper (Jumper J6) is removed, so the alignment must be done by observing the alignment indication LED, as it will have the same behavior as the Buzzer, that is, when interrupting only one beam during the initial 30 minutes the LED will flash indicating that the beam is aligned, if the LED is constantly lit the broken beam is not well aligned and the sensor must be realigned.*



7. With the sensor in *Alignment* Mode, perform the procedure described below to align the sensors:

If the IVA 7100 DUAL model is in *Sync* Function (SINC cable connected), it will follow the standard alignment procedure. However, if the SINC cable is not connected, alignment should only be carried out by interrupting the lower beam, as the buzzer will always sound continuously when interrupting the upper beam.

a. It is not necessary to enable the *Synchronism* function (SINC cable connected) to perform the alignment;
b. For fine adjustment between beam alignment, change the power level jumper to C (low power) on the transmitter and receiver;
c. If the receiver is continuously fired at power level C, try to align it by rotating the transmitter and receiver horizontally. If it is not possible to align it, change the jumper to M (medium power) and try to align them again. If the behavior persists, change the jumper again to a higher power, in this case L (high power);
d. To obtain the best alignment, break the beams individually by hand. In all the beams, the buzzer should sound pulsating and the led will flash intermittently to indicate the correct alignment;
e. If the buzzer sounds continuously and the led is constantly on when interrupting an individual beam, rotate the sensor so that all the beams are aligned and repeat the test by hand;

f. The alignment is only considered efficient if the buzzer always sounds pulsed and the led blinks steadily when individually interrupting the beams;

g. After alignment, tighten the screws at the ends to fix the alignment position;

h. Change the Power Jumper to L (maximum power), this ensures a greater intensity of the infrared signal.

Perform walking tests at various points on the barrier to make sure that there is no reflection from the infrared beams on the floor, wall or reflective objects. If reflection is found, lower the Power to the lowest level and repeat the test. If the reflection persists even at the Power C level, remove the power jumper to obtain the minimum power. If the reflection occurs even with the minimum power, it will be necessary to change the installation position of the sensor.

8. To close the sensor, just fit the PCI protection cover, the sealing rubber and, finally, attaching the support cover at the ends.

4. Troubleshooting

Follow the steps outlined below to troubleshoot your sensor:

1. Check that the installation distance is within the specified. In distances greater than 60 m or environments with a high rate of rain or fog, the use of the sync cable is mandatory.
2. Check the wiring of the installation and that the supply voltage in the TX and RX is between 12 and 18 Vdc.
3. The J2 jumper (SINC) of the RX must be inserted if the sync cable is not being used.
4. TX and RX must be on the same frequency channel - Jumper J1 (ON or OFF).
5. Check that the NO / NC jumper is inserted.
6. Redo the alignment procedure with the sensor in alignment mode.
7. Perform the detection test and confirm that there are no reflections.
8. Your infrared barrier sensor will be working!

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: Serial number:
Retailer:

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 warranty –, 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 manufacture, 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.

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