intelbras

User manual

IVP 9000 MW MASK

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IVP 9000 MW MASK
Passive infrared motion sensor with triple technology

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

The IVP 9000 MW MASK motion sensor combines microwave detection with passive infrared detection, adopting advanced signal analysis technology to prevent accidental tripping in high intrusion risk environments. Developed with 2 Quad PIR sensors and the combination of flat and hemispherical Fresnel lenses, it increases the efficiency of motion detection and reduces undetected areas below the sensor.

The IVP 9000 MW MASK sensor also contains technologies for anti-cloaking, anti-masking, detection of light sources, monitoring of supply voltage and detection of change in installation position by accelerometer. All these technologies combined ensure greater security to the site against any form of sabotage of the alarm system.

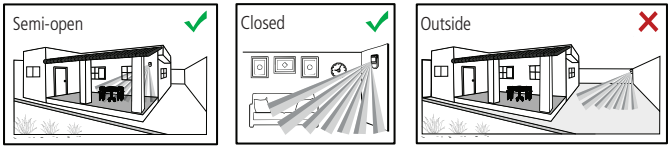
To facilitate the installation of the sensor and optimize installation time, the cabinet contains a snap-in system by front and rear cover connectors and also adjustments of end-of-line resistors built into the board and configured by DIP SWITCH.

Care and safety

» Follow all instructions in the manual for assembling and installing the product.

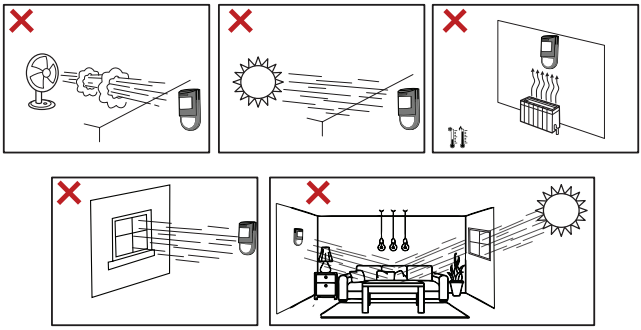
» LGPD – Data processing by Intelbras: Intelbras does not access, transfer, capture or perform any type of processing of personal data from this product.

» This product is intended for INDOOR and SEMI-OPEN environments.

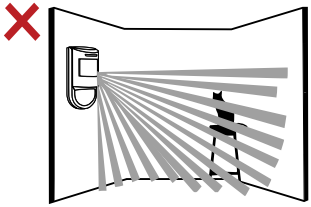


» Do not touch the surface of the infrared (PIR) sensor. If necessary, use a soft, dry cloth for cleaning.

» Do not use the sensor in areas with sudden temperature changes such as air conditioners and heaters, fans, refrigerators and ovens. Do not expose the sensor directly or to reflections from sunlight.



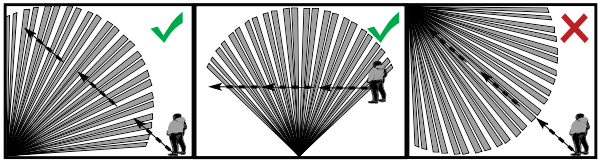
» The *PET* function is intended for lowland animals weighing up to 10 kg. If the animal is on top of a bench, for example, the *PET* function can be overridden.



» When installing the sensor in environments with the presence of animals, it is recommended to configure the sensor for a semi-open environment, switch S1 position 3 activated. This way the sensor makes the appropriate sensitivity adjustment and disables the Anti-Camouflage function, if it is enabled.

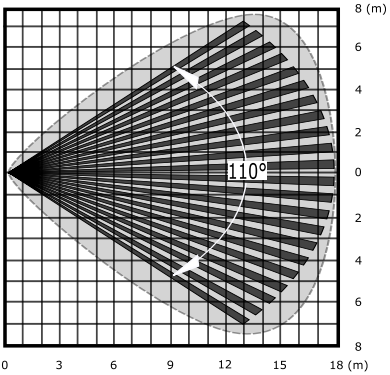
» Do not place objects in front of the sensor. To secure the detection area, avoid curtains, screens, screens, or any object that blocks the scan.

» The sensor must be installed where an intruder can be easily detected, that is, where it moves transversely to the detection beams.

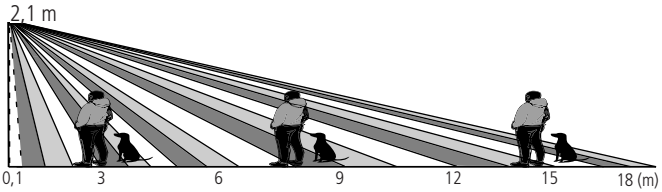


» The sensor must be installed on a flat, fixed, flicker-free surface, with a height between 2.0 and 2.4 meters. It is recommended to install the sensor parallel to the wall for the greatest detection range.

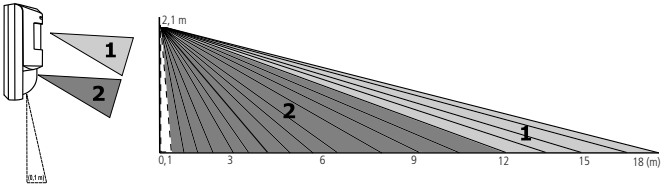
Detection area (Top view)



Detection angle (Side view)



Side view



Summary

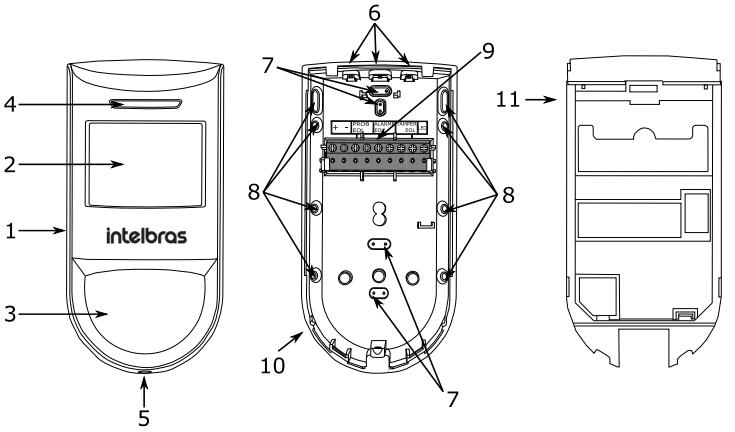
1. Technical specifications

Operating voltage	9 ~16 Vdc
Operating current	50 mA
Detection angle	110°
Detection range (PIR and MW)	18 metros
Detection method	Microwaves and PIR (AND)
Number of pyroelectric sensors	2
Pyroelectric sensor type	Quad
Microwave frequency	10,525 GHz
Animal immunity	Up to 10 kg
Sensitivity	Automatic (factory default) Minimum
ALARM output	NF, 28 Vdc and 100 mA max.
Output PROBLEM	NF, 28 Vdc and 100 mA max.
Anti-violation	Rear tamper and accelerometer
LED indicators	LED: Yellow (PIR) Red (MW) Blue (Alarm)
Startup time	60 seconds
Relay opening time	3 seconds
Operating Temperature	-10 °C to 50 °C
Recommended installation height	2.1 meters
Dimensions (W × H × D)	67 × 134 × 54 mm
Weight	134 g

2. Features

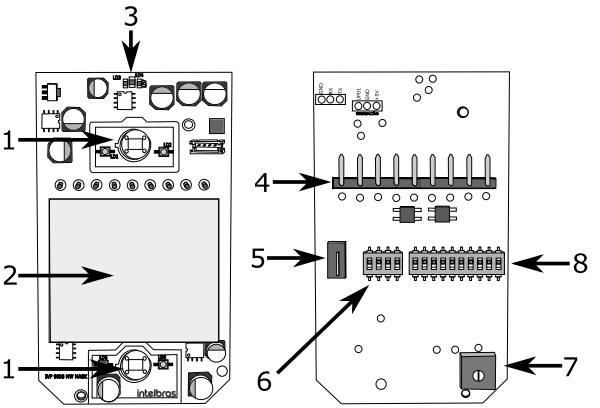
- Anti-masking;
- Anti-camouflage;
- Position anti-tamper (accelerometer)
- Anti-tamper (tamper key);
- Anti-sabotage by light incidence (light sensor);
- Monitoring of supply voltage;
- Look down (creeping zone);
- Automatic temperature compensation;
- RFI/EMI immunity;
- Automatic adjustment of infrared sensitivity (PIR);
- Microwave sensitivity adjustment (MW);
- Integrated end-of-line resistor;
- Immunity to creeping animals weighing less than 10 kg;
- Remote self test function;
- Ease of installation;
- Mechanical protection of the electronic circuit.

3. Product



1. Front cover
2. Flat lens
3. Hemispherical lens
4. LEDs
5. Closing screw
6. Wire passage seals
7. Seals for wall installation
8. Seals for corner installation
9. Connector
10. External base
11. Internal base

Board

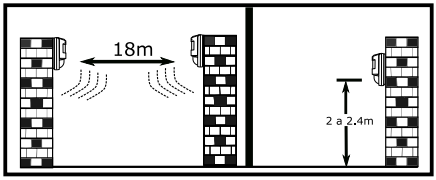


12. Pyro sensor
13. Microwave module
14. LEDs
15. Connector
16. Tamper key
17. 4 position key
18. Trimpot microwave adjustment
19. Position key

4. Installation

» Before starting the installation, it is necessary to define the height at which the sensor will be positioned, which can vary from 2 to 2.4 m;

» Do not install sensors that have microwave technology close to each other, as there may be interference between them;



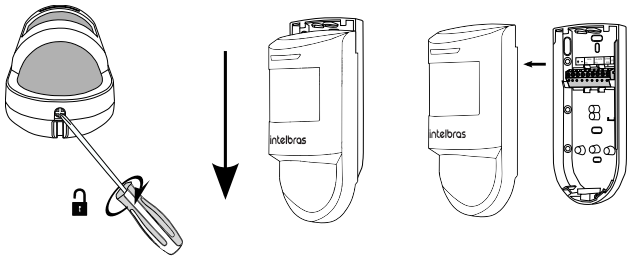
» The microwave sensitivity adjustment must be done according to each environment;

» For installation using the articulator, make sure that both the sensor and the bracket are securely fixed in the installation location to avoid changes in the product's detection angle. Incorrect use of the articulator can change the sensor's detection area, creating blind spots and impairing operating efficiency;

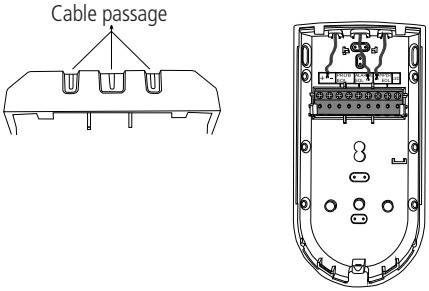
» If the sensor is installed at an angle, its detection range and PET function may be impaired in such a way as to nullify the function.

To install the sensor, follow the procedure below:

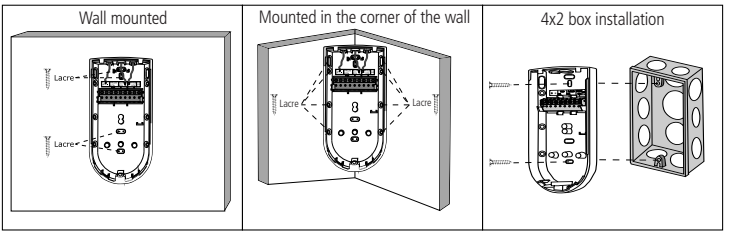
1. Unlock the back cover by partially loosening the screw and remove it by sliding the front cover down, as shown in the picture.



2. Route the wiring through the cable passages located on the sensor back cover.
   Note: *use a tool to drill the hole in the indicated location.*



3. Connect the connecting cables to the sensor terminals and install in the place to be protected. For installation directly on the wall, 4×2 box or in a corner of the wall, break the seals indicated for the holes in the rear fixing cover.



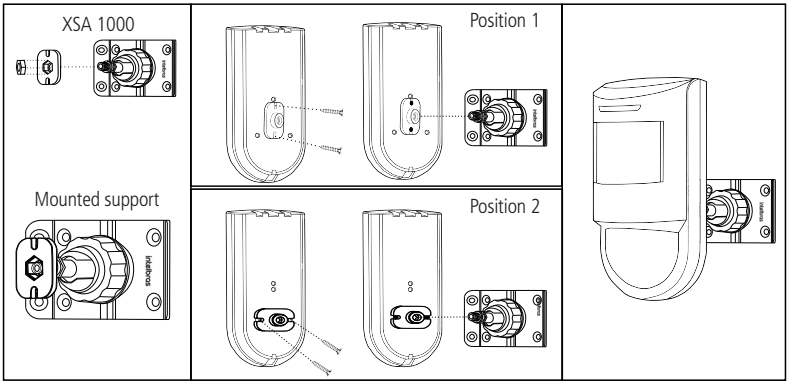
4. Installation using the articulator.

   Note: *the articulator does not come with the product.*

   Attention: if the fixing bracket is inclined to the ground, the characteristics of the *PET* function will change.

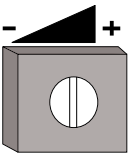
   Use the fixing holes located on the base to fix the XSA 1000 articulator, for more information about the XSA 1000 articulator, consult the user manual on the website: www.intelbras.com.br

   The recommended screw for attaching articulators to the product is 3.5 × 9.5 mm.



5. Perform the configuration on the sensor following the guidelines.

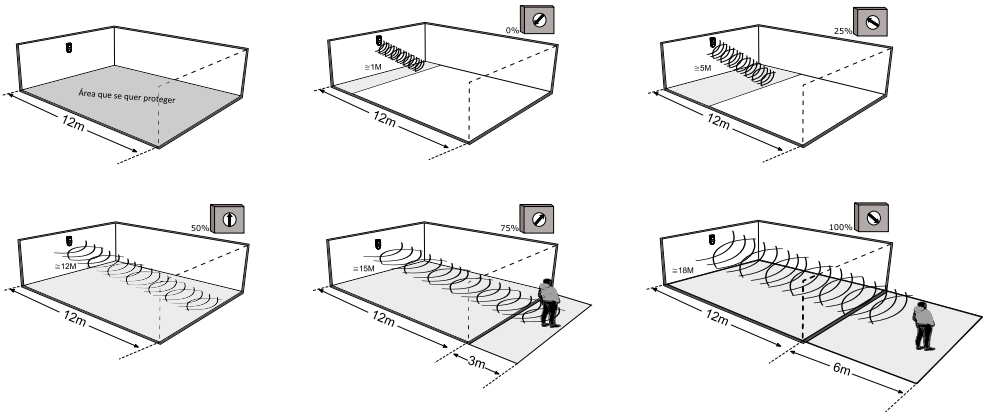
4.1. Microwave sensitivity adjustment



Microwave

The trimpot allows you to adjust the microwave's sensitivity. Turning the trimpot clockwise increases the sensitivity and consequently the distance at which the microwave is able to detect movement. Turning it counterclockwise makes the microwave less sensitive.

Note: *it is highly recommended to adjust the microwave sensitivity so that detection takes place only in the environment where the sensor is installed. This technology is capable of detecting movement through a wall, for example.*

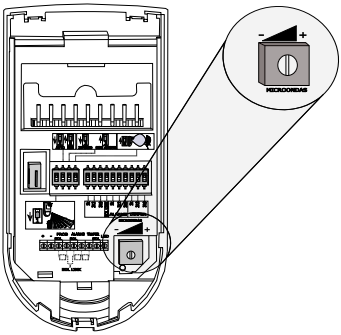


In figure 1 of the example above we have the area we want to protect. Figures 5 and 6 indicate that the trimpot adjustment exceeded the limits of the environment to be protected. In this way the microwave will detect movements outside the desired area.

To make it easier to adjust the microwave cover, adjust the trimpot counterclockwise (less sensitive) and walk in the room you want to protect. Observe the sensor motion detection. If necessary, increase the sensitivity (clockwise). Repeat this process until the sensor only protects the environment where it is installed.

The figure below shows a microwave channel detection range reference.

Factory default: 50%



Microwave range

Trimpot position	Maximum distance
0%	0% up to 1 meter
25%	25% up to 5 meters
50%	50% up to 12 meters
75%	75% up to 15 meters
100%	100% up to 18 meters

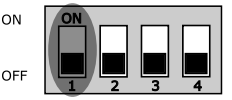
4.2. Operating mode settings

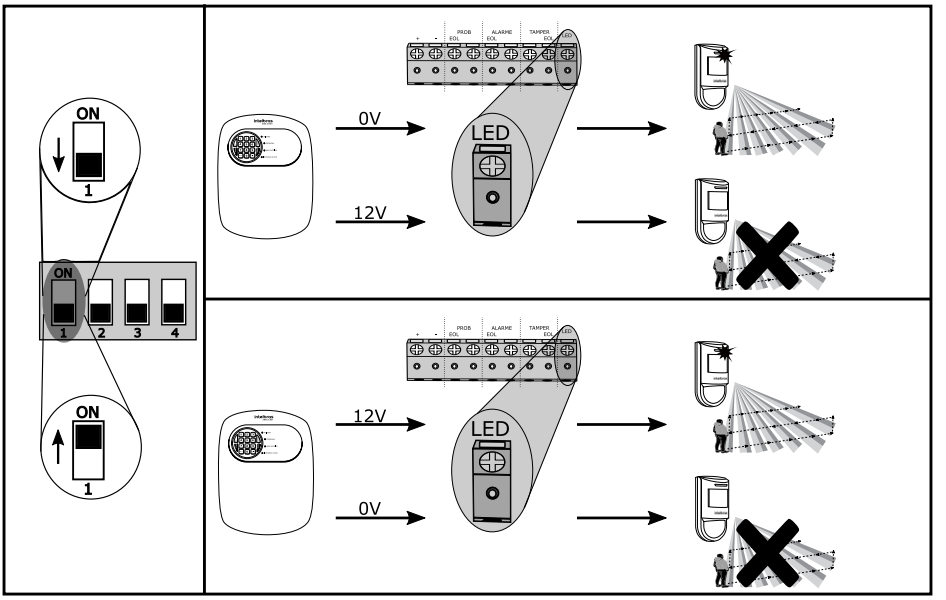
The key (S1) allows you to configure the sensor's operating mode:

Key 1 – LED: works in conjunction with the LED input to control the visual indication of motion detection.

LED		
Key 1	**LED input**	**LEDs**
Condition		**Result**
ON	12 Volts	LEDs on
OFF	0 Volts	LEDs on
ON	0 Volts	LEDs off
OFF	12 Volts	LEDs off

Factory default: LEDs on.



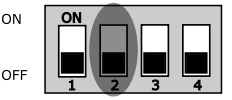


Key 2 – SENSITIVITY: controls the sensitivity of the two PIR channels to trigger the alarm. With the switch in the ON position, the sensitivity is configured in order to avoid trips with little movement, that is, minimum sensitivity. This setting is suitable for semi-open environments or environments with some interference that could cause unwanted triggering.

With the key in the OFF position, the sensitivity remains with automatic adjustment and is controlled through an algorithm that analyzes the conditions of temperature, light and movement of the environment.

SENS	
Position	**Condition**
ON	Minimum sensitivity
OFF	Automatic

Factory default: Automatic.



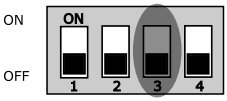
Key 3 – LOCAL: controls the sensor operation settings according to the installed environment. With the key in the ON position, the sensor adjusts the operating mode and sensitivity for a semi-open environment.

Note: *with this configuration the sensor does not detect camouflage attempts.*

With the key in the OFF position, the sensor adjusts its operating mode to an indoor environment..

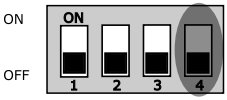
Local	
Position	**Condition**
ON	Semi-open
OFF	Internal

Factory default: Internal.



Key 4 – SELF-SABOTAGE: monitors improper sensor position changes after installation, attempts to mask the sensor's Fresnel lens, cloaking attempts, power level failures, and attempts to bypass the sensor by incident light. With the key in the ON position, anti-tamper is enabled. With the key in the OFF position, anti-tamper remains disabled.

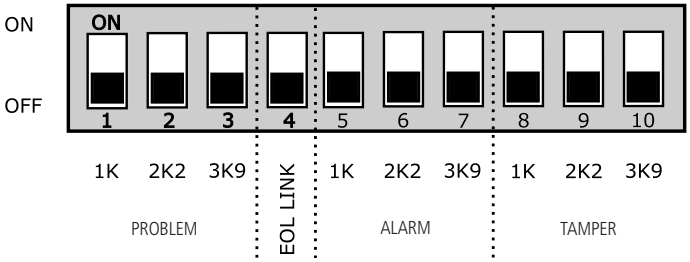
Antissabotagem	
Position	**Condition**
ON	Enabled
OFF	Disabled



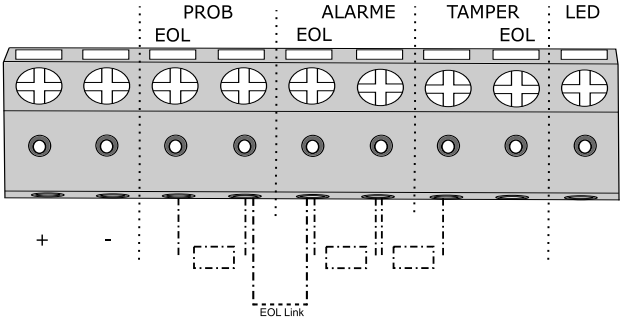
4.3. End-of-line resistor settings

The IVP 9000 MW MASK has 3 sets of switches, and in each one of them the 1K, 2k2, 3k9 resistors are already integrated in the sensor board, it is not necessary to connect any external resistor to the sensor terminals.

The switch (S2) allows selecting the end-of-line resistor for each of the sensor outputs (TROUBLE, ALARM and TAMPER).



- **Keys 1, 2 and 3 – output resistors PROBLEM:** the resistor is connected in parallel with the PROB output.
- **Key 4 – EOL Link:** when activated, it makes the connection between the ALARM output and the PROBLEM output.
- **Keys 5, 6 and 7 – ALARM output resistors:** the resistor is connected in parallel with the ALARM output.
- **Keys 8, 9 and 10 – TAMPER output resistors:** the resistor is connected between the ALARM output and the TAMPER.

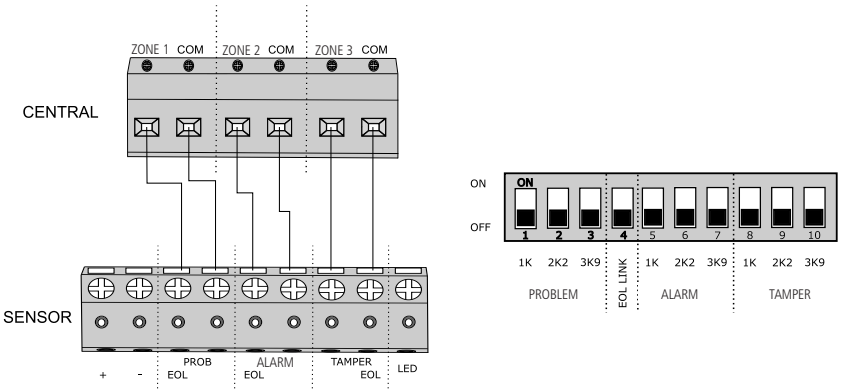


Note: *check that your control panel has the resistor values and connection configuration compatible with the configuration available on the IVP 9000 MW MASK sensor.*

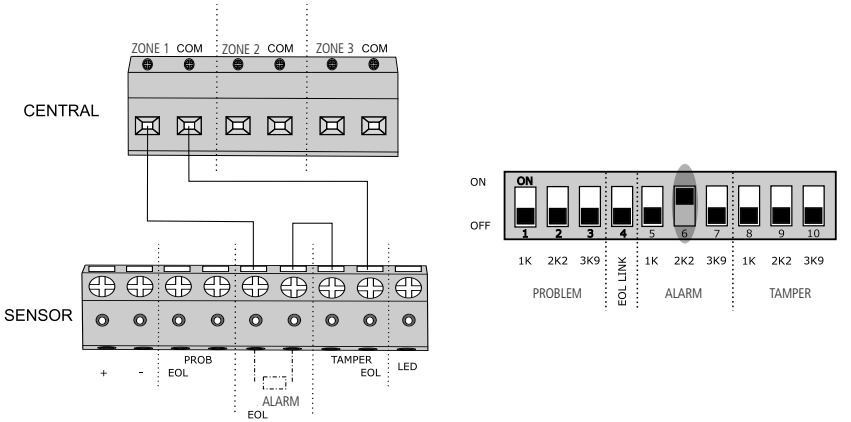
If the control panel does not have a compatible configuration, keep all switches in the OFF position.

Possible adjustments of the IVP 9000 MW MASK sensor with Intelbras alarm center

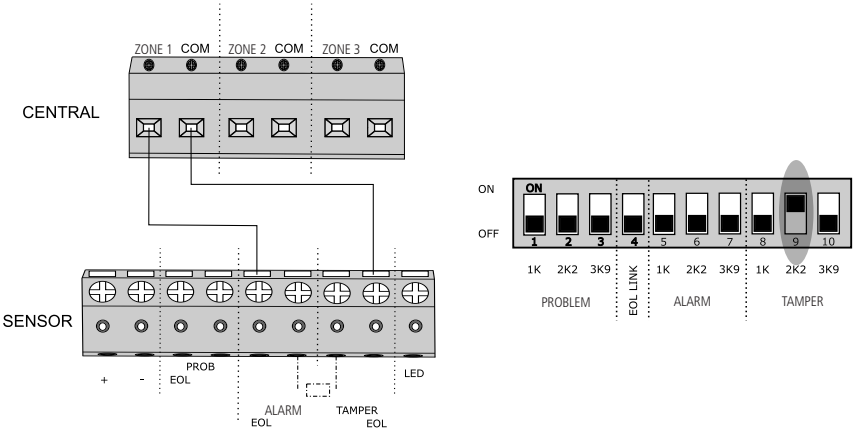
0- Single zone without end-of-line resistor:



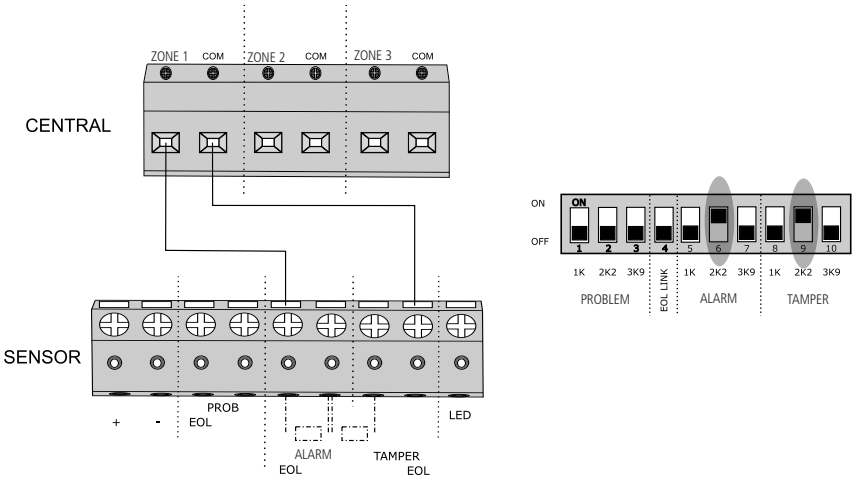
1- Single zone without end-of-line resistor and with tamper detection:



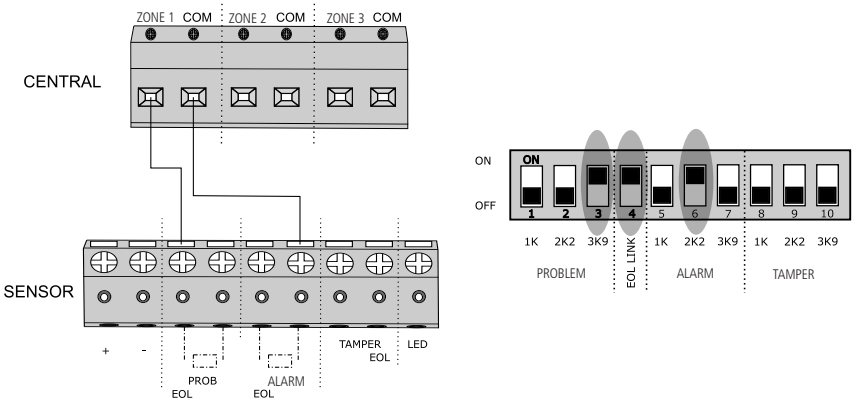
2- Single zone with end-of-line resistor and wiring short-circuit detection:



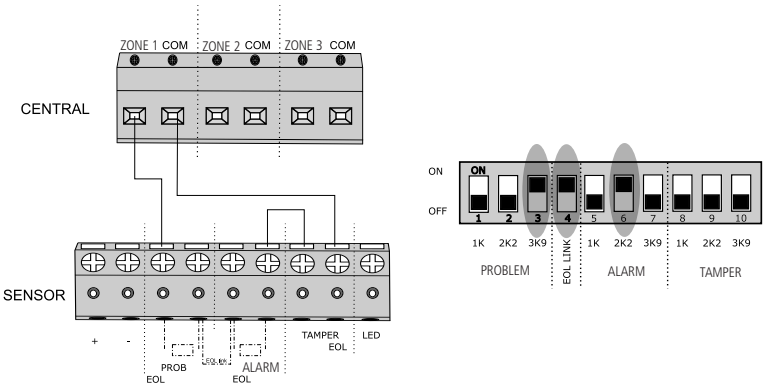
3 – Single zone with end-of-line resistor, tamper detection and wiring short circuit:



4- Dual zone without end-of-line resistor:

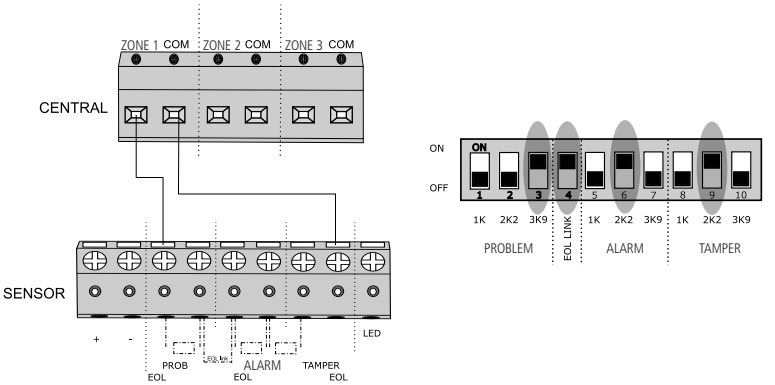


5- Dual zone without end-of-line resistor and with tamper detection:

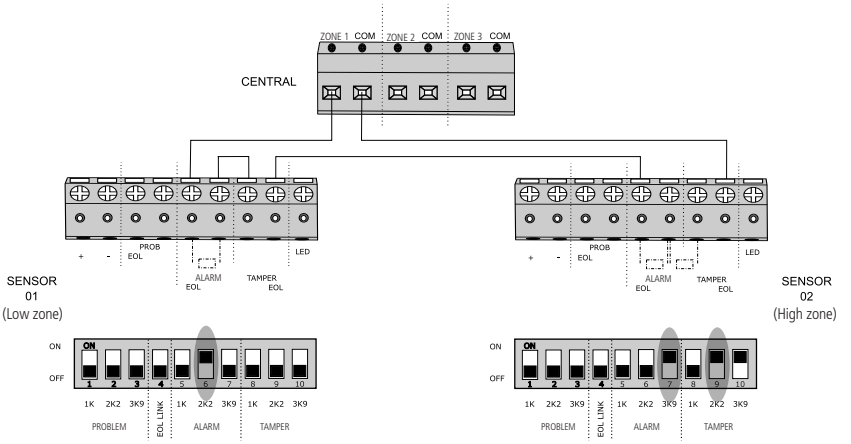


6- Dual zone with end-of-line resistor, tamper detection and wiring short circuit:

Connection with an IVP 9000 MW MASK sensor using the Alarm and Trouble output

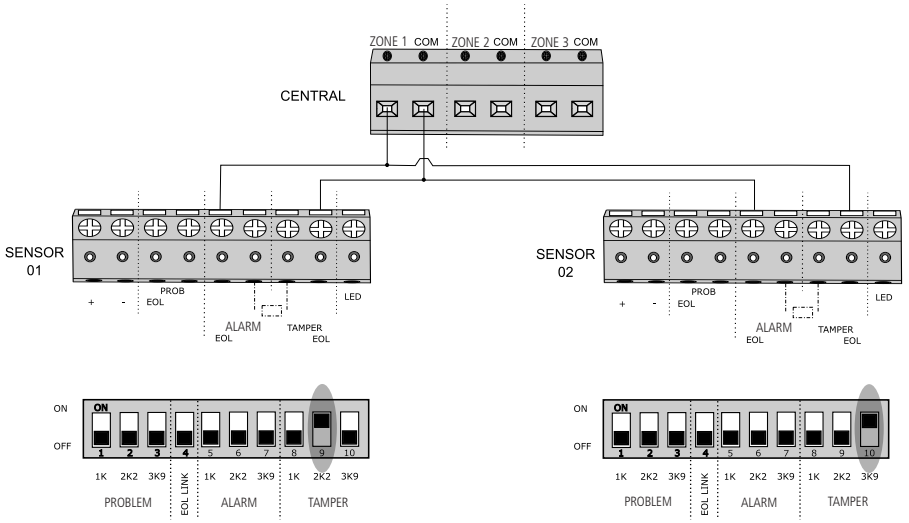


Connection with two IVP 9000 MW MASK sensors using the Alarm output



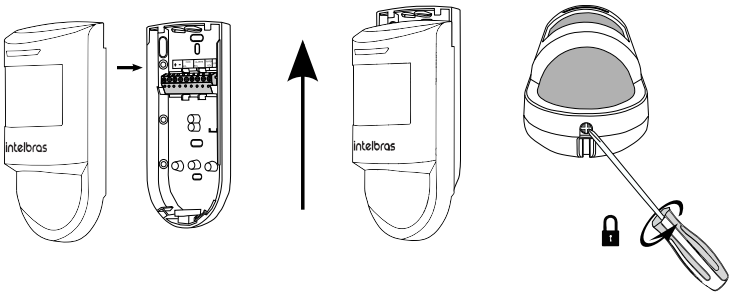
7- Parallel duplication with wiring short circuit detection:

Note: *this connection uses resistors in series with the sensor output. In the example below, we exemplify the connection of the Alarm output of two different sensors using the resistors built into the sensor board. If you want to use only one sensor, using the Alarm and Trouble outputs in the same wiring diagram, you will need to connect a resistor in series with the Trouble output.*



4.4. Process completion

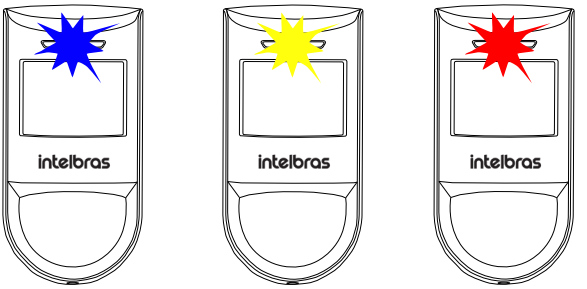
Once the sensor is configured, close it by sliding up the front case on the back cover and tighten the screw.



5. Operation

When turning on the sensor, the blue LED flashes for approximately 60 seconds. This time is necessary for the stabilization of the circuits that make up the sensor. After this period, if they are enabled, the LEDs light up with each motion detection.

The LEDs have automatic intensity adjustment according to the brightness of the installed environment.



- » **Blue LED:** alarm
- » **Yellow LED:** Pir
- » **red LED:** microwave

5.1. Remote self test

With this function it is possible to remotely enable or disable the visual indication of the LEDs and thus remotely perform a test run of the product.

For this, it is necessary to combine the adjustment of the LED switch with the voltage applied to the LED input of the product.

For more details on the functioning adjustment, see item *4.2. Operating mode settings*

5.2. Self sabotage

For each of the attempts to tamper with the sensor, the red LED flashes quickly and the PROBLEM output acts to indicate the type of tampering.

It is highly recommended that the TROUBLE output be connected to a zone of the control panel with 24-hour function enabled.

Sensor output indication table

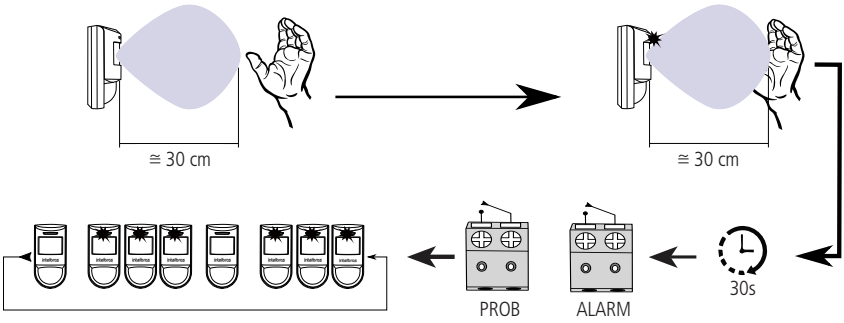
Exit		Cause	Solution
Alarm	**Problem**		
Open and restore	Closed	Trigger (PIR and Microwave) or anti-camouflage	Check the conditions of the installed environment and make the best microwave setting.
Open	Open	Masking	Check sensor lens for obstruction.
Closed	Open	Low supply voltage level	Check if the sensor supply voltage is greater than 9 V.
Closed	Open and restore	Position change	Check if the sensor has changed its installation position or if it is not properly fixed.

Anti-masking

This function consists of detecting undue obstructions in the sensor lens, ensuring that the sensor's operation is not impaired if its detection area is obstructed.

If the lens is obstructed, the sensor starts counting for 30 seconds. While the tamper attempt remains, the red LED flashes at regular intervals and the TROUBLE and ALARM outputs remain open, indicating sensor masking.

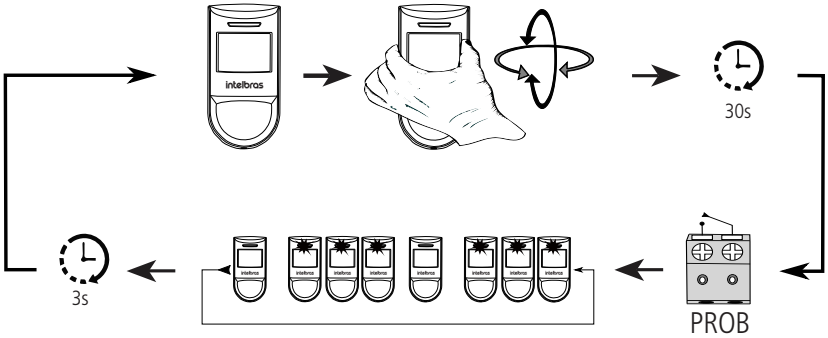
After clearing the lens, the sensor automatically detects the restoration of operation and returns to the normal state.



Position change

This function consists of monitoring undue changes in the sensor installation angle, ensuring that it does not become unusable if its installation position is changed.

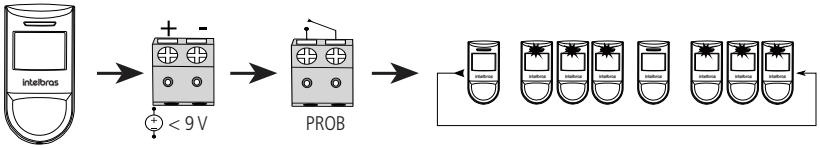
Upon detecting a change in the installation position, the sensor starts counting for 30 seconds. While the tamper attempt remains, the red LED flashes and the ALARM and TROUBLE outputs open for 3 seconds, indicating sensor masking. After 3 seconds the sensor returns to normal status.



Power supply voltage monitoring

The IVP 9000 MW MASK periodically monitors its supply voltage.

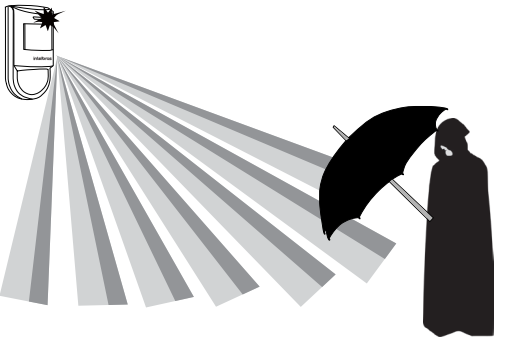
When detecting supply voltage below 9 volts, the red LED periodically flashes and the PROBLEM output remains open as long as the supply voltage is below the recommended level.



Anti-camouflage

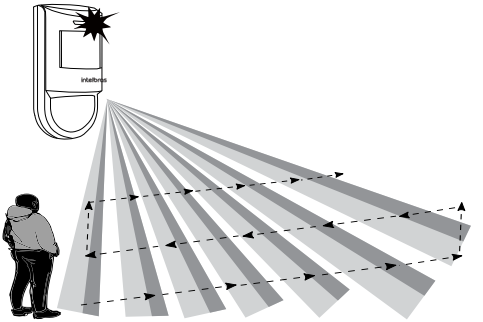
The IVP 9000 MW MASK is capable of detecting movements even if the individual uses some material to camouflage body temperature.

When doing this analysis and detecting the movement, the sensor indicates the trip through the ALARM output.



6. Test

Once installed and running, walk across the area to be protected, simulating a possible intrusion into the environment. See if the sensor is able to detect your movements during the journey, through the LEDs. Adjust the microwave's sensitivity to the size of the room or reposition the sensor. Be sure to take all precautions and follow the installation recommendations to obtain the best operating performance from the product.



7. Homologation

This equipment is not entitled to protection against harmful interference and may not cause interference to duly authorized systems. This is a product approved by Anatel, the approval number can be found on the product label, for queries, visit the website: *sistemas.anatel.gov.br/sch*.

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:

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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 guarantee 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.

All the images of this manual are illustrative.

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talk to us

Customer Support: (48) 2106 0006
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Support via e-mail: suporte@intelbras.com.br
Customer Service: 0800 7042767
Where to buy? Who installs it? 0800 7245115

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