1 – Security warnings

⚠ This instruction manual must be respected and kept to ensure security. Please contact the assistance service for further questions, as incorrect installation impairs security.

A qualified technical professional who respects local laws, rules, and regulations must install, maintain and repair the photocell.

The photocell and the reflector must be installed opposite each other, on vertical walls parallel to each other. The walls must not transmit vibrations to the photocells.

The installation position must protect it from collisions and ensure easy access for maintenance.

The product has protection against water and dust so that it can be used outdoors. The product must not be used in environments with high salinity, acidity, or the danger of explosion. Avoid installing the product in places where water accumulates or floods.

Make sure the cable outlet is facing downwards. Install the photocell away from obstacles that could obstruct the beam.

2 – Product description and application

The photocell is intended only for automation systems for doors, gates, barriers, and the like. **Its use in any way other than that described in this manual is prohibited**.

3 – Connection instructions

The photocell has three operating modes: pulsating, normally open, and normally closed. For the correct system configuration, configure the photocell according to the following procedures:

ATIV/PASS jumper closed (passive relay): Figure 6-c
ATIV/PASS jumper open (active relay): Figure 6-d
Pulsating mode (PPA only): Figure 6-e

Signal strength (figure 6-b):
- For installations of 0.7 to 2 meters of clearance, JUMPER 2 closed.
- Over 2 meters of clearance, JUMPER 1 closed.

4 – Assembly instructions

- Keep photocell cables away from any other energized line to avoid interference.
- All photocell transmitters that interfere with the signal must be turned off to align each photocell pair.
- Beware of reflective surfaces that can change the signal.
- Use suitable tools for assembly/disassembly, and follow local regulations.
- Install the photocell on the side where the operator is positioned, as the control unit will receive the activation commands. In contrast, the reflector unit is fixed on the other side, aligned with the photocell.
- When installing the reflector, consider the Installation Position Indicator; it must always be facing upwards.
- The photocell is installed so that the cover through which the photocell wires exit faces downwards to prevent water from entering.

Figure 8 shows the product installation drawing. The installation height must be set so the light beam can capture the objects you want to protect, such as cars, people, and animals. Remember that the minimum height of 30 cm must be respected to ensure the proper product operation and avoid false triggers.

⚠ Warning: When installing the product on smooth or polished floors (surfaces with high light reflection), install the photocell at least 40 cm from the floor to prevent floor reflection from affecting the correct sensor operation.

Supply the photocell with an auxiliary source, for example, from the automation board. Always observe the polarity; the wires must be connected to the auxiliary source according to item 3 instructions (connection instructions).

5 – Alignment instructions

For better equipment performance on rainy days, we advise spraying the Photocell and Reflector lenses with water before performing the alignment, as shown in figures 12 and 13.

The installation kit contains an alignment template with two measures to ensure the perfect system alignment and, consequently, the best product performance. Use the appropriate measures according to the distance at the time of installation.

- **For distances of up to 4 meters between the Photocell and the Reflector:** Align the assembly with the help of the entire template (without detaching it) (figure 14-a).
- **For distances above 4 meters between the Photocell and the Reflector:** Detach the template at the recommended measure and align the assembly (figure 14-b).

LED SIGNALING ON THE PHOTOCELL (figure 1):
- **LED indicator on:** Photocell misaligned or obstructed.
- **LED indicator off:** Photocell aligned and unobstructed.
- **Flashing LED indicator:** used for installation. When the LED is flashing, it indicates the Photocell is already sending the signal to the control unit and working. However, it is partially aligned, requiring only a simple adjustment for complete alignment and operation with 100% of its features.

NOTE: The slower the LED blinks, the closer the Photocell is to perfect alignment. If the LED starts blinking faster, the Photocell is getting less aligned.

6 – Usage warning

Photocells are not a safety device, only an auxiliary component for safety. Although they are built to ensure reliability, they may malfunction or break in some situations. In addition, a problem might not manifest itself immediately; therefore, the following warnings should be respected:

- **Passing through the gate or barriers is prohibited while closing or about to close.**
- **In cases of malfunction, use the operator only in manual mode.**
- **Call a qualified technical professional for the necessary repairs.**

7 – Maintenance

Regularly carrying out preventive maintenance and checks ensures an increase in the equipment's life. Therefore, it is crucial to carry out the following maintenance at least every six months: clean the lens and the outside of the photocell with a damp cloth (do not use alcohol-based detergent, benzene, abrasives, and the like), check the condition of the equipment (presence of moisture or oxidation) and verify if the equipment continues to function correctly.

8 – Disposal information

A qualified professional must answer for disassembly and scrapping operations. The product is made of different materials, some of which are recyclable while others are scrap. Look for information on recycling and disposal systems required by local regulations for products in this category.

⚠ Some parts of the product may contain polluting or hazardous substances which, if released into the environment, could cause serious harm to the environment and human life.

Separate waste into categories for disposal, according to methods defined by local legislation, or return it to the place where you purchased the product when buying a new model.

⚠ WARNING: Local regulations may include hefty fines for the inappropriate waste disposal of this product.

9 – Technical features

Supply voltage	12 - 24 VDC
Maximum current consumption	Standby: 60 mA Active: 80 mA
Beam angle emitted by the photocell	1.25° +- 0.5°
Maximum reach	8m
Cable maximum length	3 m - 0.5mm² cable
Protection level	IP54
Operating temperature	-20°C to 50°C
Time response	90 ms
Dimensions	45 x 156 x 65 mm
Weight	240g
Monitoring technologies	NO, NC and Pulsating
Package content	Photocell, reflector, fixing kit and user manual.
Type of light emitted	Red, 623 nm

Manufactured by:
Motoppar Indústria e Comércio de Automatizadores Ltda
Av. Dr. Labieno da Costa Machado, 3526 - Distrito Industrial
Garça - SP - CEP 17406-200 - Brazil
CNPJ: 52.605.821/0001-55
www.ppa.com.br | 0800 0550 250

⚠ ATTENTION: Do not use this equipment without first reading the User's Manual.

USER'S MANUAL

F10-R

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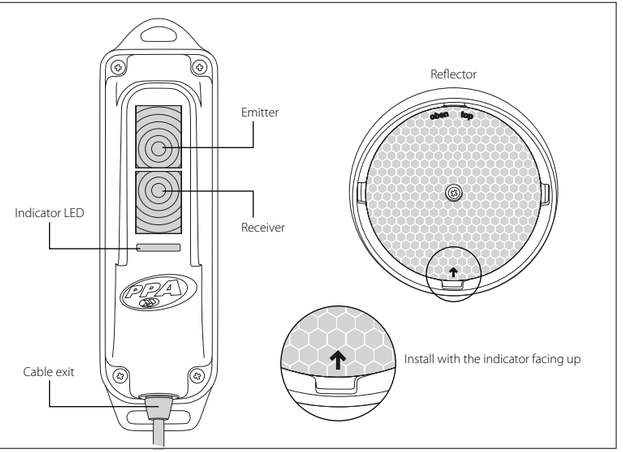
Rev. 1

TROUBLESHOOTING

FAULT	CAUSES	SOLUTIONS
Red LED is off	Photocell is off or inoperative	Check the power cable connections, the polarity, and if the voltage at the power supply terminals is between 12 and 24V. The Emission Intensity Selection Jumper is likely disconnected if it is powered correctly.
Blue LED flashing slowly	Operating with a weaker signal than expected	Make sure that there is no object between the photocell and the reflector. Check the alignment following the guidelines in this manual and clean the lens and reflector.
Blue LED flashing quickly	Photocell operating with minimum signal required. (very weak signal)	Make sure that there is no object between the photocell and the reflector. Check the alignment following the guidelines in this manual and clean the lens and reflector.
Blue LED is constantly on	There is no minimum signal required (Very weak or no signal)	Make sure that there is no object between the photocell and the reflector. Check the alignment following the guidelines in this manual and clean the lens and reflector.
Gate closes only when the photocell is blocked	Command logics is inverted	Check the connection diagram and the "ACTIVE/PASSIVE" jumper connection contained in this manual and make sure which command logic is required by the control board (NO or NC).

1



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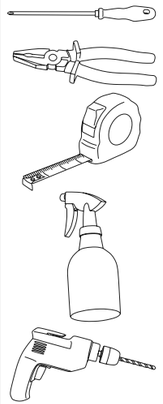

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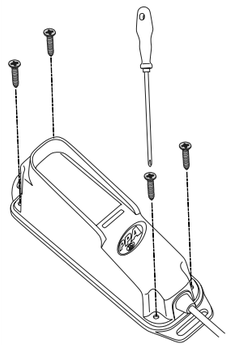

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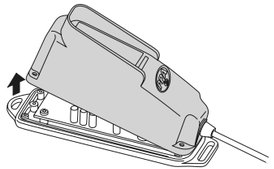

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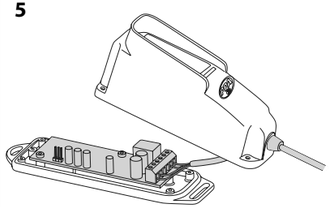
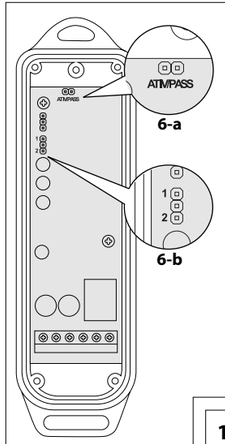
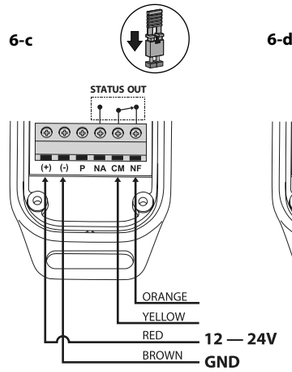
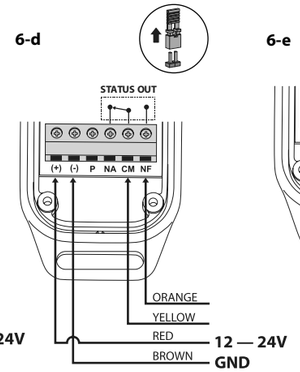




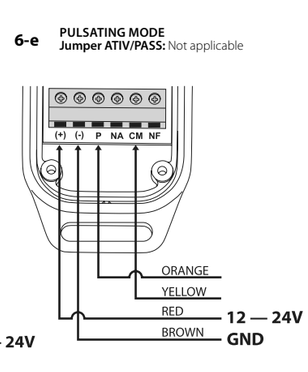
6-c



6-d



6-e **PULSATING MODE**
Jumper ATIV/PASS: Not applicable



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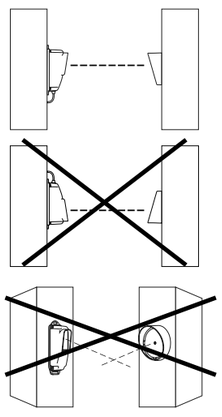

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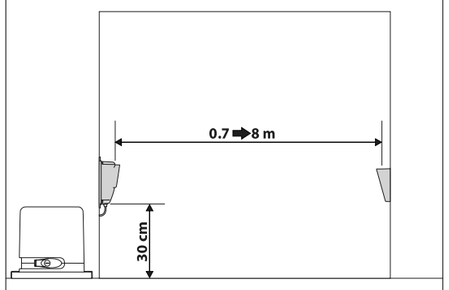

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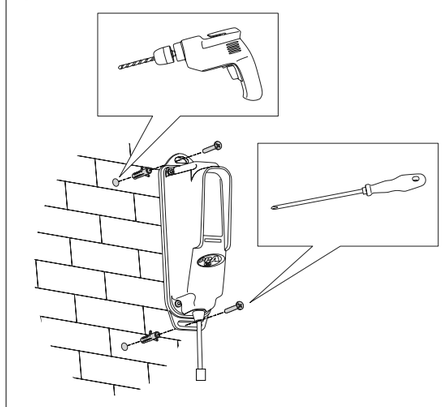

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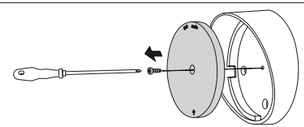

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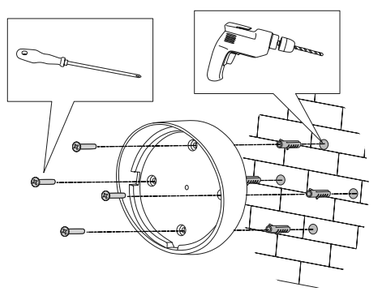

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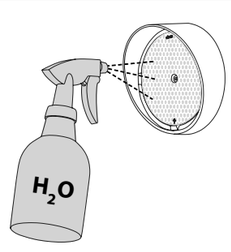
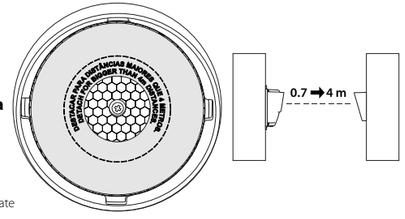


14

14-a



Template

14-b