

# VG-PC-3

## Preliminary Installation and Operating Instruction

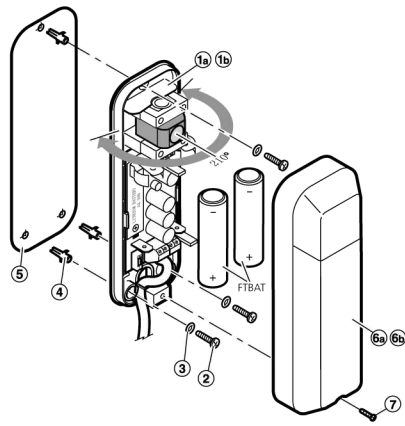


Fig. 1

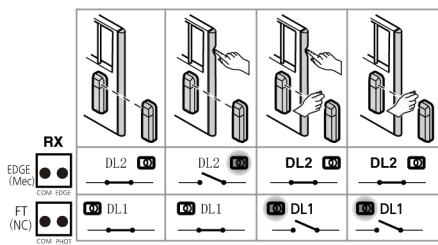


Fig. 2

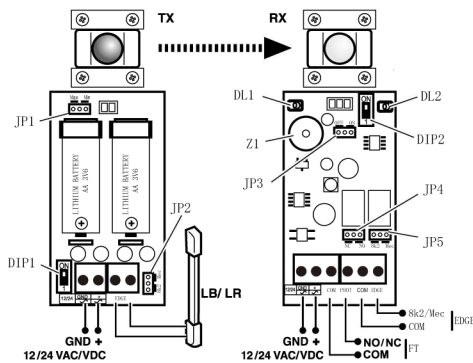


Fig. 3

## 1. DESCRIPTION

### Warnings

The VG-PC-3 photocells are designed to detect obstacles in automatic door and gate installations, preventing collision with the door/gate.

They are made up of an infrared transmitter module (TX) and receiver module (RX). If a person or object interrupts the infrared beam emitted by the transmitter (TX) (or the beam does not reach the receiver due to failure or loss of setting), the receiver (RX) enables the corresponding relay and informs the installation control panel.

They also have terminals to connect mechanical or 8k2 resistive safety strips, so the strip can be connected to the transmitter, which sends the strip signal to the receiver, thus avoiding having to wire the strip to the control panel.

The transmitter can be battery powered, to simplify the wiring, especially if it is mounted on the moving leaf and a safety strip is also mounted on this leaf.

Install and use the device in line with these instructions. Inappropriate use may lead to faults and hazardous situations.

### Characteristics

- Possibility of powering the TX transmitter with 2 AA format 3.6V Lithium Thionyl Chloride (Li-SOCl<sub>2</sub>) batteries.
- Possibility of multi-voltage powering of TX and RX modules.
- Adjustable lenses (approximately 210°) on TX and RX.
- Possibility of managing the signal of an external security strip (8k2 resistive or NC mechanical): the transmitter (TX) allows the connection of 8k2 resistive or mechanical strips (selectable via JP2) and the receiver (RX) allows the configuration of the output to the panel in mechanical (NC) or resistive (8k2) mode (selectable via JP5).
- RX with NO/NC voltage-free relay photocell output contact, selectable via JP4.
- Possibility of choosing 2 ranges of separation distance between RX and TX, selectable via JP1.
- Sound warning (buzzer Z1) for battery discharge.
- Synchronised operation selectable via DIP1 in TX and DIP2 in RX, to avoid interference between close pairs.
- Power supply:  
TX: 3-3.6Vdc 2.7Ah; 12-24Vac; 12-36Vdc  
RX: 12-24Vac; 12-36Vdc
- Consumption:

TX: <200  $\mu$ A (3.6Vdc) (min.); <400  $\mu$ A (3.6Vdc) (max); 15mA (24Vdc) (min.); 20mA (24Vdc) (max).

- RX: 30mA (24Vdc);
- Wavelength: 940nm
- Photocell contact response time (FT): <90ms; strip contact response time (EDGE): <120ms
- Operating temperature: -20°C / +60°C
- IP protection: 44
- Relay contacts capacity: 1A at 24VDC
- Infrared beam range according to JP1: min.: 15m maximum (5m in adverse conditions); max.: 30m maximum (9m in adverse conditions)
- Battery discharge threshold: 3V
- Battery life: Approx 2 years (with J1 in Min.)
- Dimensions: 150mm (H) x 42.5mm (W) x 43 (D)

### Synchronisation Function (DIP1 and DIP2)

The VG-PC-3 photocells have, on the transmitter and receiver, synchronisation DIP (DIP1 and DIP2 respectively) to allow each pair to operate on the same frequency (DIP1 and DIP2 in the same position), and with different frequency to another close pair, to avoid interference between both pairs.

This synchronisation function works in both AC and DC (even with battery-powered TX).

### Terminals for safety strip

Both the transmitter and the receiver have terminals to connect safety strip (mechanical or 8k2 resistive). In this way, the safety strip installed on the door's mobile leaf, can be connected to the photocell's TX transmitter, which sends the strip's signal to the RX receiver via the infrared beam. This RX receiver has safety strip terminals to connect it to the control panel.

This avoids having to wire the safety strip located on the mobile leaf with the control panel.

### Content (fig. 1)

- Transmitter module (TX): base (1a) and cover (6a)
- Receiver module (RX): base (1b) and cover (6b)
- Two bore templates (5)
- 6 fastening and adjustment (2) screws with their respective plugs (4), 6 rubber washers (3), 2 cover fastening screws (7).
- LB/LR is the safety strip, it is optional and supplied separately.
- FTBAT is the pack of 2 (non-rechargeable) AA format 3.6V/2.7Ah Lithium Thionyl Chloride (LiSOCl<sub>2</sub>) batteries. It is optional and supplied separately.

## 2. INSTALLATION

Discard the packaging safely and in an environmentally friendly manner.

Complete the electrical installation in line with low voltage regulations and applicable rules.

Check the instructions for the control panel in order to make the connections.

### Configuring the JPs

- JP1, range:  
JP1=Min: range up to 15m (5m in adverse conditions);  
JP1=Max: range up to 30m (9m in adverse conditions).
- JP2, safety strip type  
JP2=Mec: NC mechanical safety strip;  
JP2=8k2: 8k2 resistive safety strip  
If a safety strip is not installed, use the factory settings: jumper on EDGE terminals and JP2=Mec.
- JP3, configuring buzzer Z1 JP3=ON: the buzzer emits an intermittent beep when the transmitter batteries are low; JP3=OFF: buzzer off.
- JP4, photocell contacts;  
JP4=NC: contacts normally closed;  
JP4=NO: contacts normally open;
- JP5, type of safety strip (depending on type of input on the control panel):  
JP5=Mec: NC mechanical safety strip;  
JP5=8k2: 8k2 resistive safety strip

### DIP Configuration

Synchronism function:

DIP1 (on the TX transmitter) and DIP2 (on the RX receiver) synchronise the transmitter (TX) and the receiver (RX). On each pair of photocells, DIP1 and DIP2 must be configured in the same position. On different pairs of photocells close together, to avoid interferences between pairs, one of the pairs must be configured in a different position from the other.

### Assembly and connections

Install the receiver (RX) protected from direct sunlight (infrared radiation).

- 1 Choose a location for the transmitter and receiver equipment. The two modules should be as aligned as possible.

The installation height of the photocells will depend on the installation (in general, we recommend installation at a height of less than 300 mm from the ground and at a distance of less than 200 mm from the leaf of the gate).

- 2 Using the supplied templates (5), make the appropriate orifices in line with the surface for attachment.

- 3 Insert the cabling and make the connections as shown in the figure.

- The transmitter can be battery or AC/DC powered.
- If a safety strip is not connected to the transmitter, use the factory settings: jumper on EDGE terminals and JP2=Mec.
- If the panel does not have a specific strip connector and you wish to install the strip, do the following: on the RX receiver, fit a jumper between the NC (PHOT) and COM (EDGE) terminals; connect the COM (PHOT) and Mec (EDGE) terminals to a safety connection (NC) on the control panel; configure JP4 on NC and JP5 on Mec.

- 4 Insert expansion plugs (where necessary) and secure the modules with the screws (2) and sealtight washers (3).

### Checking operation

- 1 Align the optics of the photocells by rotating them on their respective pivots.

- 2 Connect the electrical power supply and check operation:

When RX correctly receives the beam sent by TX, the NC contact remains closed and DL1 off. When the beam is interrupted (by an obstacle or because the photocells are not aligned), the NC contact is opened and DL1 is turned on.

When RX correctly receives the beam sent by TX (DL1 off) and detection or fault is produced on the safety strip, DL2 is turned on.

The table in figure 3 indicates the possible statuses of the PHOT and EDGE terminals depending on the statuses of the photocell and the safety strip.

- 3 Secure the covers (6) of the transmitter and receiver using the screws (7).

- 4 With the covers (6) in place, once again check the correct operation of the photocells.

### Troubleshooting

Should the photocells not work correctly, check the following:

- the power supply voltage
  - if direct voltage has been used, check the polarity
  - the battery status (if TX is battery powered)
- the configuration of DIP1 and DIP2 (same position in each pair of photocells and different between close pairs)
- that the photocells have not suffered any damage from the weather or from possible banging from external agents.