

Infrared Photocell Synchronized Instruction Manual

Introduction

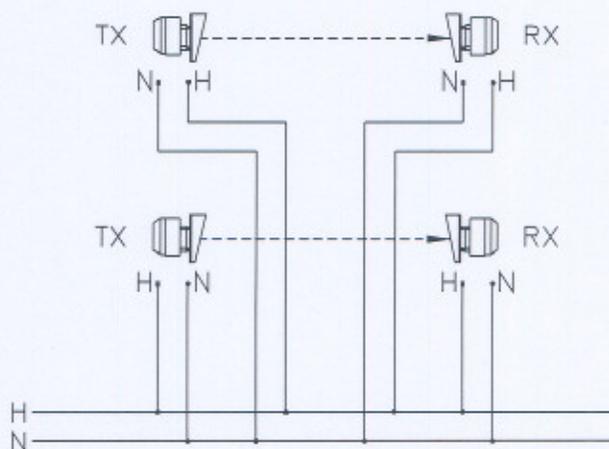
The photoelectric cells D-168 Mark 1 is a safety device suitable for automatic access. Each pair consists of a modulated infrared ray transmitter (TX) and a receiver (RX) with a dual relay output contact. Both cells have an optical system (lens) to concentrate the ray, an electronic circuit as immunity to sunlight and synchronizing system for installing two pairs of photocells. The container is in a glass reinforced plastic material offering high resistance mechanical damage and weathering.

The D-168 Mark 1 is wall embeddable and operates at 12 to 24 VAC/VDC. Two outer cases are provided to enhance the mechanical installation.

Installation

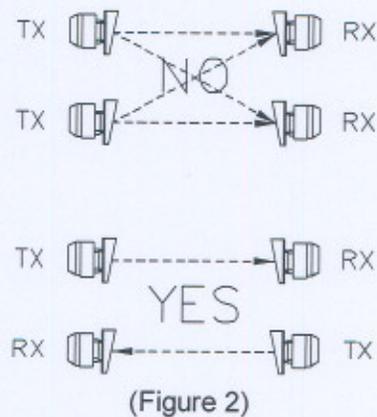
The receiver and transmitter must be located one in front of the other and fixed so as to be as accurately aligned as possible. In the case of errors or in extreme cases, the inside bodies of the photocells can be slanted vertically or horizontally $\pm 15^\circ$.

If two parallel pairs of photocells are used, the rays of one pair can interfere with the other pair causing a malfunction. In case of alternating current it is advised to set both transmitters so they are synchronized. Synchronizing requires the pairs of photocells to function on different phases. Therefore it is important to pay attention to the wiring supply. The phases must be the same in the first pair, but inverted in the second pair (Figure 1). Cut jumper to synchronize (Figure 4).



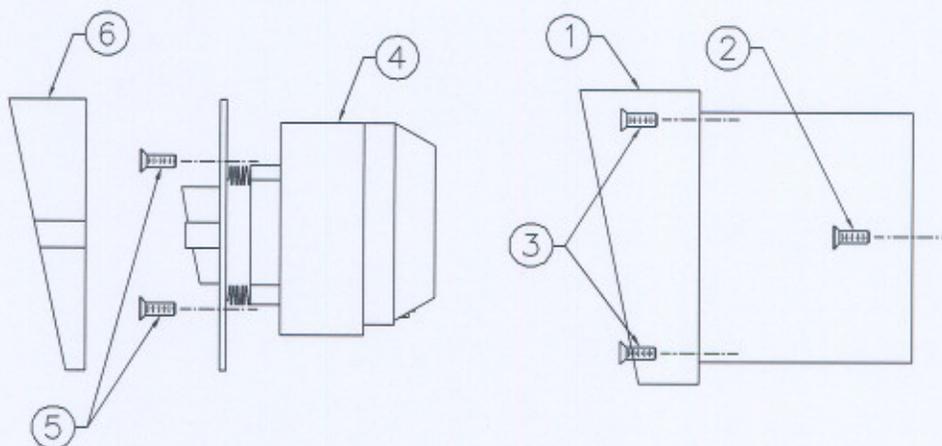
(Figure 1)

Avoid placing both receivers on one side and both transmitters on the other; alternate receivers with transmitters (Figure 2).



The sensors should be installed by qualified personnel in accordance with all applicable codes and standards established by the laws in force in the country of installation. Failure to comply with the instructions could prejudice correct functioning of the equipment, creating a hazard source for people, consequently THE MANUFACTURER declines all responsibility for any malfunction and/or damage as a result of such failure.

- A) Reference Figure 3, insert the covers (1) and line up the TX and RX as much as possible. They can be fastened as follows:
- using two screws in the holes on the bottom (2)
 - using foamed adhesive material or concrete,
 - using four screws (3) for attachment to studs or sheet metal.
- B) Make the electrical connections according to the drawings. To facilitate installation and centering, it is recommended to keep the cables between the outside cover and the photocell as short as possible.

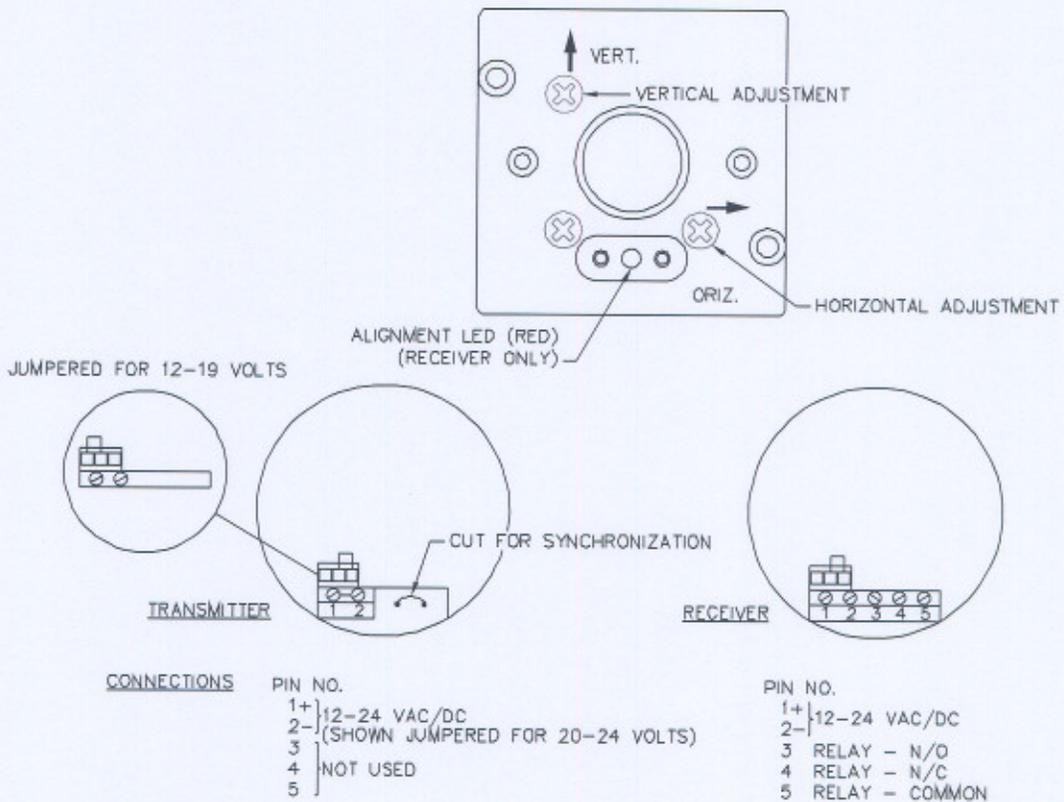


(Figure 3)

- C) Fasten the photocell (4) using the supplied screws (5).
- D) Test the photocell and center it. After adjustment, install the lens covers (6).

Power Supply and Switch Outputs

The photocells are powered with 24 VAC or VDC. For voltages lower than 19 V plug in the jumper provided (Figure 4).



(Figure 4)

Centering and Testing

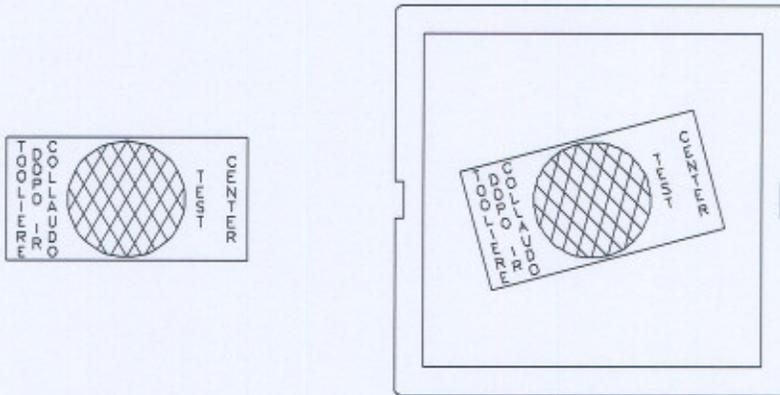
Check that the voltage is the same as required for the photocells and that the power is on. At this point, if the alignment of the pair is reasonably centered, the receiver should switch the output. If this does not happen proceed with centering.

To facilitate alignment, the inside bodies of both the transmitter and receiver are mounted on springs and with the aid of the two adjustment screws they can be swiveled horizontally and/or vertically (Figure 4). The receiver is equipped with a red LED that switches off when the photocell is centered. The photocells should be centered as close as possible, even if they initially appear aligned.

Check functioning by passing in front of the infrared ray several times (the red LED on the receiver should turn on and the relay should switch). Repeat this also after the covers of the receiver and transmitter have been installed.

The centering filter (Figure 5) is used for an additional test and to be sure that even in the worst conditions, i.e. fog or rain, everything works properly.

The test is quick and simple: place the film on one of the fronts and check that the photocell is working properly. If it does not it means the photocells are at the limit of its working range or the alignment is not accurate. **Note:** Remember to remove the plastic film when you have finished testing.



(Figure 5)

Technical Data

Type	Modulated Infrared
Range	200 feet [60 meters] (Note 1)
Power Supply	12 V - 24 V VDC or VAC +/- 20%
Power Consumption TX + RX	24 V 105mA (60mA + 45mA) 12 V 155mA (85mA + 70mA)
Operating Temperature	-4°F to 140°F [-20°C to 60°C]
Contact Rating	1 Amp at 30 VDC

(Note 1) Due to rain, fog, dust or misalignment, the range may be reduced by 50 to 70 percent.

EC Declaration of Conformity

The producer, Telecoma S.r.l, declares that the product FT501 (Delta Model D-168 Mark 1) used as photocells for gate openers comply with essential requirements of the **Directives 89/336 (EMC) and 73/23 (LVD)** and their amendments, when used for their intended purpose. The above mentioned product is meant as an integral part of one of the installation configurations as shown in our catalogs.

Place and Date:

Conegliano, 04/06/2001

General Manager