

SLIM II photocell MOUNTING INSTRUCTION

v.1.4

1. Principle of operation

Photocell includes transmitter and receiver (fig.1). The transmitter emit a coded Infrared (IR) signal invisible to the naked eye. Obstacle appearance (e.g. car) on photocell working area produces a detection signal on receiver output. Receiver has NC and NO type output contacts, the circuit is protected by additional relay. Photocell is destined to work in gate automation system as external element.

2. Technical data.

▶ Guaranteed range	1-15 m
▶ Angle of view adjustment	horizontally 200° in receiver and transmitter
▶ Power supply of transmitter and receiver	12-24V AC/DC (synchronization option requires AC supply)
▶ Current consumption of transmitter	max. 25 mA
▶ Current consumption of receiver	max. 25 mA
▶ Working temperature (min. / max.)	-20°C / +55°C
▶ Outside dimensions (WxDxH)	35 x 30 x 110 mm
▶ Mounting	surface mounted splash proof case - Ip54
▶ Output contacts	NO and NC

3. Photocell mounting.

For proper functionality photocell must be mounted 40-60 cm off the ground, receiver and transmitter distance not less than 1 m. Photocell has angle of view adjustment in receiver and transmitter. Coaxial mounting is unnecessary. Give consideration to electric boards maximum angle of rotation inside transmitter and receiver enclosure. Because of photosensitive elements it is recommended to mount receiver on less sun exposure side. Both receiver and transmitter must be mounted vertically. Terminal blocks and humidity carrying openings should be in the bottom part of enclosure. Proper receiver and transmitter adjustment is facilitated by receiver's green diode RX. RX diode lights when transmitter ray reaches receiver. Both enclosures should be mounted by 2 (diagonal mounting) or 4 screws available in set.



Do not mount mirrors or reflection screens in photocell's working area, if possible mount the receiver on the less exposed to the sun side, do not mount the photocell receiver in a location exposed to strong light source of stray light, especially fluorescent light, it can interfere the barrier. Beware of optical receiver/transmitter elements soiling while mounting.

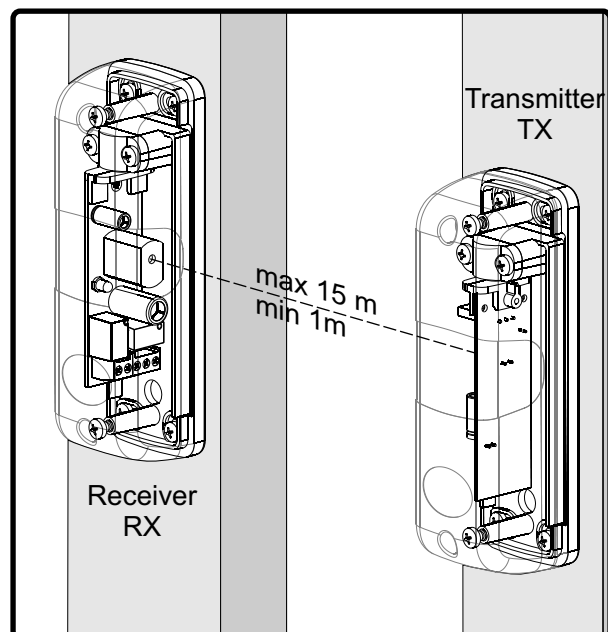


Fig.1. Exemplary receiver - transmitter location

SLIM II photocell MOUNTING INSTRUCTION

4. Photocell connection

Photocell cooperates with most of gate controllers available on market.

It is recommended to do electrical installation and photocell mounting by qualified person.

Connect photocell according to Fig. 3 scheme and description below.

Without synchronization function

- ▶ Make sure the **ZW** jumper on the transmitter and receiver are mounted.
- ▶ Connect the power supply 12-24V AC/DC to photocell transmitter and receiver. **POWER** LEDs on the transmitter and the receiver, and **RX** LED on the receiver should light up.
- ▶ If you use the AC power supply to power the transmitter and receiver use the same phase (with one power supply)
- ▶ Connect the output signal of photocell (usually NC and C) to proper inputs on the control unit. Pay particular attention to the type of control (NC or NO) required in the control panel. The standard solution for gate automation is to work with optical sensors in the NC.

With the use of synchronization function

Using synchronization function, you can install two pairs of photocells with the overlapping area of the optical range.

To use the synchronization function, you must cut the **ZW** jumper in photocell transmitter and receiver, and supply them with alternating voltage (12-24VAC).

Connect the same wire to the terminal marked "1" on the transmitter and the receiver of the first pair of photocells. If swap wires only on the transmitter side or only on the receiver side, will result in no action of photocells. The second pair of photocells must be powered by the same phase as the first, but wires in the supply line of transmitter and receiver must be swap. (the power wire connected to the terminal marked "1" in the first pair of photocells, must be swap with the next wire in the second pair of photocells).

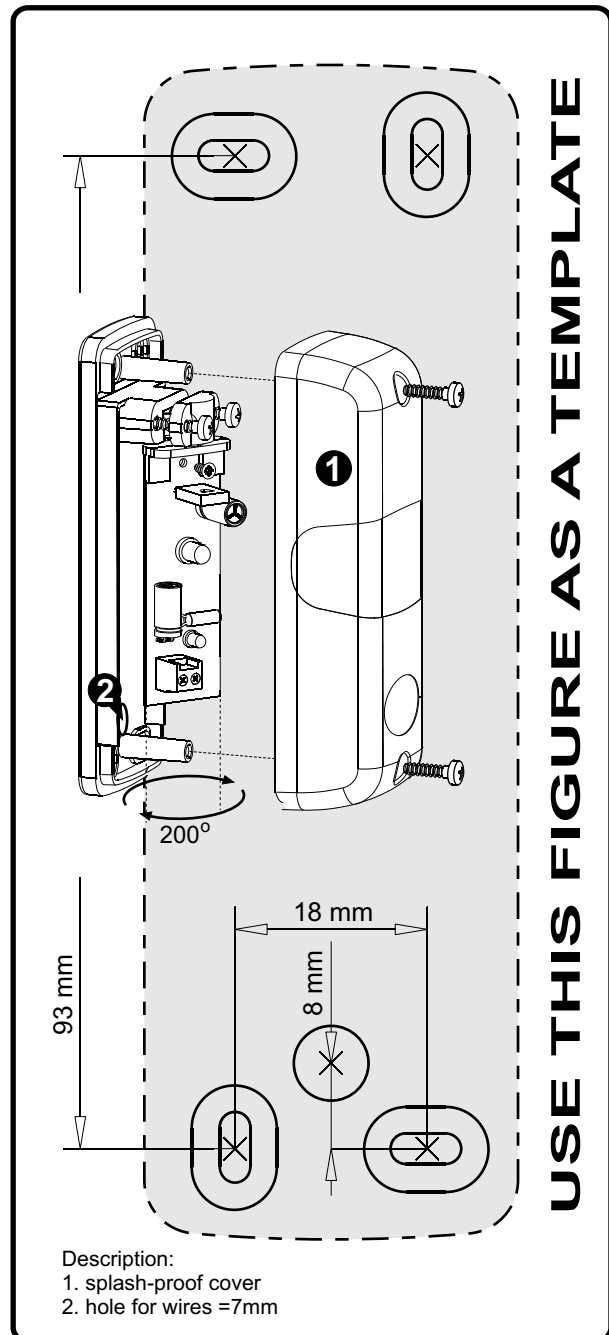


Fig. 2 Distance of the mounting holes on a scale of 1:1, with the assembly drawing.

Power supply: **12-24V AC/DC**
Current consumption: **max. 25mA**
Range: **1 - 15m**

Working Temp.: **-20°C / +55°C**
Cover IP: **54**
Dimensions: **35x30x110mm**

In case of problems with identifying the AC power cable, you can use the following procedure, in order to connect two pairs of photocells located in one area of the optical range:

- ▶ make sure the jumper labeled 'ZW' in transmitters and receivers of both pairs of photocells are cut (open),
- ▶ Connect the power supply **12-24V AC (alternating)** to the transmitter and the receiver of the first pair of photocells. **POWER** diode should light on the transmitter and receiver, as well as the **RX** diode on the receiver. If the **RX** diode is off, swap wire only on the transmitter side or only on the receiver side. If the **RX** diode still not light, it means that the receiver can not "see" the ray of the transmitter - adjust the position of the transmitter or receiver and, if necessary, repeat this step.
- ▶ supply power to the receiver of the second pair of photocells. The result should be to light only the **POWER** diode on the receiver. **RX** diode should remain off (meaning no reaction of the receiver of the second pair of photocells on the ray from the transmitter of the first pair of photocells). If the **RX** diode is light, swap the receiver supply wire.
- ▶ Supply power to the transmitter of the second pair of photocells. The **POWER** diode on the transmitter should light, the **RX** diode on the receiver of second pair of photocells should also light up. If the **RX** diode is off, swap the transmitter supply wire.
- ▶ Connect the photocell receiver signal terminals (usually NC and C) to the proper input of the control unit. Pay particular attention to the type of control (NC or NO) required in the control panel. The standard solution for gate automation is the work in optical sensors in the NC.

5. Receiving tests.

After photocell connection is done, it is recommended to check receiver (RX) reaction on Infrared signal breaks. Gate automation systems must be tested conformity to EN 12445 standard.

Photocell test:

- ▶ Supply power to receiver only and check if RX diode out.
- ▶ Supply power to transmitter and check if RX diode light.
- ▶ Displace roller of 5 cm diameter and 30 cm length, to break perpendicular optical axis between receiver and transmitter. First in the vicinity of transmitter TX, next in the vicinity of receiver RX, next in the middle of distance between them. In all cases photocell should switch from standby to alarm mode, which is signalized by RX diode wane.

6. Warranty.

DTM System checks all the devices before shipping. The warranty time is 24 months from the selling date. This time is counted according to the warranty label. The manufacturer will fix all the problems which come because of his fault. Non functioning device should be delivered back to the distributor with short problem description. The cost of mount/dismount is covered by user. The warranty do not cover: batteries in the remotes, faults caused by improper usage, user self repairs and adaptations, lightning strikes, over voltages or short circuits in the mains supply. Appropriate legal acts regulates details of the warranty.



The intention of the WEEE Directive (Directive 2002/96/EC on waste electrical and electronic equipment) is to reduce the amount of hazardous substances in waste.

The underlying purpose is to promote the avoidance, recovery and risk-free disposal of waste.



DTM System spółka z ograniczoną odpowiedzialnością spółka komandytowa
ul. Brzeska 7, 85-145 Bydgoszcz
tel./fax. (52) 340-15-83, 340-15-84
www.dtm.pl, dtm@dtm.pl



CONNECTION SCHEME

- * For the **synchronization function**, use only the power supply voltage alternating current (AC) and cut the ZW jumper in transmitter and receiver of both pairs of photocells.
Swap wires in the supply line in one pair of photocell.
- ** When using photocells in a place where interfere due to reflections from walls or other items reduce the power of the transmitter.
To do this, cut the LO POWER jumper in transmitter.

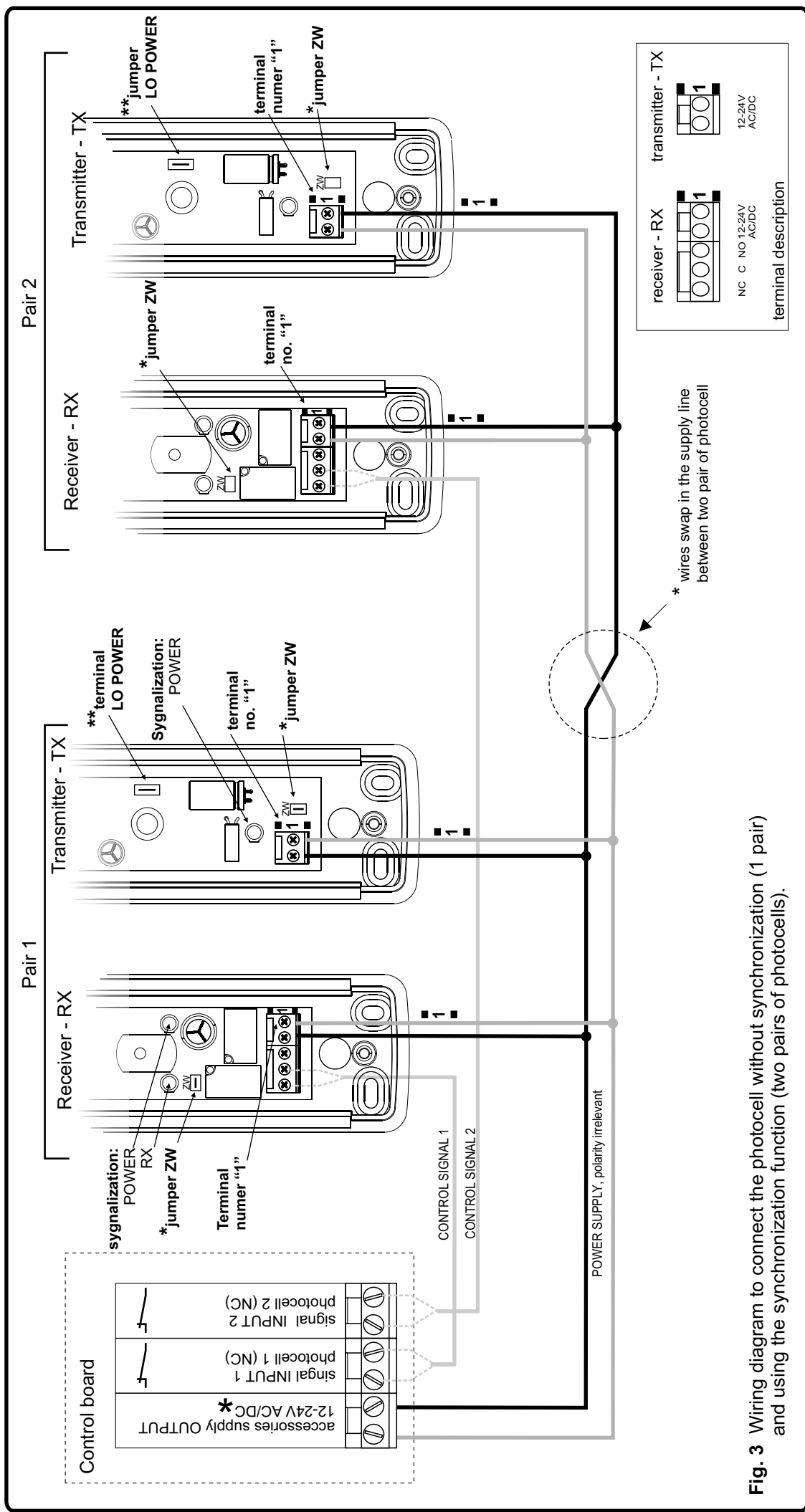


Fig. 3 Wiring diagram to connect the photocell without synchronization (1 pair) and using the synchronization function (two pairs of photocells).