

# Mounting and installation manual

## Photocell LS 45/2





## Important warning and safety notes for mounting and operating


- These installation and operating instructions form an integral part of the product "photocell". They have been specifically written for professional installers trained and skilled in the trade and should be carefully read in their full length before carrying out the installation. They describe the proper installation and operation of the sliding gate operator only, not of the overall device "automatic gate". After the installation this manual has to be handed over to the user.
  - The EU Machine Directive, laws and rules concerning the prevention of accidents, and laws and standards which are in force in the EU and in the individual countries have to be strictly followed.
  - The TOUSEK Ges.m.b.H. cannot be held liable for any claims resulting from disregards of the laws and standards in force during the installation and operation.
  - The product may only be used in accordance with its original purpose, for which it has been exclusively designed, and which is described in these installation and operating instructions. The TOUSEK Ges.m.b.H. rejects any liability if the product is used in any way not fully conforming to its original purpose as stated herein.
  - The packaging materials (cardboard, plastic, EPS foam parts and filling material etc.) have to be properly disposed of in accordance with the applying recycling- and environmental protection laws. They may be hazardous to children and therefore have to be stored out of children's reach.
  - The electrical installation must be carried out in accordance with applicable regulations (eg with earth leakage circuit breaker, overcurrent protection). If necessary connect the motorized gate to an earthing system.
  - Only original spare- and replacement parts may be used for repair of the product.
  - The TOUSEK Ges.m.b.H. rejects any liability for claims resulting from usage of the product in combination with components or devices which do not fully conform to the applying safety laws and rules.
  - The installer has to inform the user about all aspects of the automatic operation of the complete gate facility, as well as about emergency operation. The installer further has to supply to the user all instructions relating to the safe operation of the gate facility. The installation and operating instructions also have to be handed over to the user.
  - The user shall be informed that in the event of a malfunction of the product, he has to turn off the main switch and that he can put the system back into operation, only after having carried out the necessary adjustment or repair works.
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- **Installation, connection, commissioning and maintenance must be performed by qualified personnel in accordance with installation instructions, codes of good practice and applicable standards. An incorrect assembly may lead to serious personal injury and damage to property!**
  - **The product is not suitable for installation in explosion-hazardous areas. The presence of flammable gases or fumes are a serious hazard!**
  - **You can equip the power supply with an all-pole disconnecting mains switch with a contact gap of min. 3mm.**
  - **When installing the safety devices (photocells, safety edges, emergency stops, etc.) please consider the Standards and Directives, the criteria of the code of good practice, the installation environment, the operating logic of the system and the forces developed by the motorized gate.**
  - **The safety devices must protect against crushing, shearing and pull-in and against general hazards of motorized gates.**
  - **After the installation it is absolutely necessary to doublecheck the proper functioning of the gate including the safety devices.**
  - **Apply warning and information signs, as foreseen by the regulations in force, in order to mark dangerous places.**
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- **Before starting any connecting work, switch off the main switch!**
  - **If the control is power supplied, its inner part is under tension.**
  - **In order to avoid electrical strokes, the safety regulations have to be followed.**
  - **During connection, adjustment and maintenance, make sure that the electronic board is not damaged by moisture (rain).**
  - **The manufacturer can not be held liable for damages resulting from improper or unreasonable use of the photocell!**

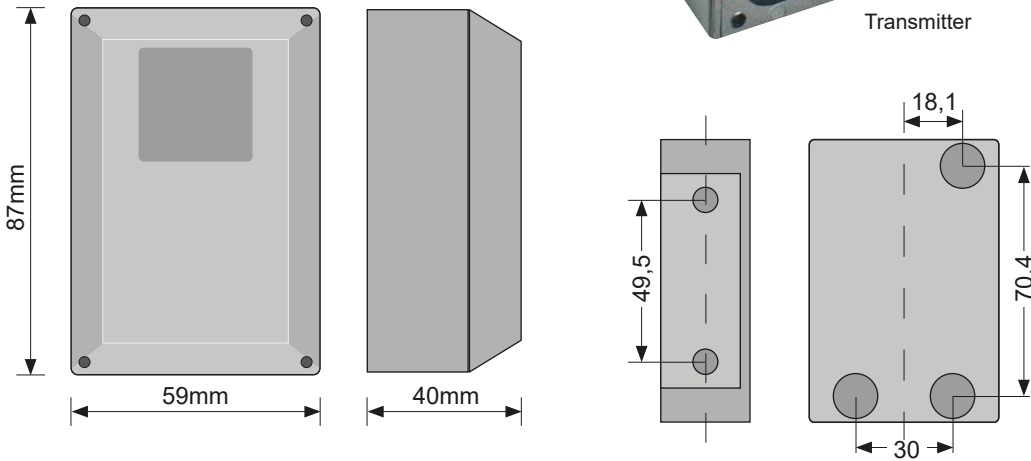


## Note concerning cable laying

- **The electric cables have to be laid in insulating sleeves which are suitable for underground usage. The insulating sleeves have to be lead into the inner of the operator housing.**
- **230 V cables and control lines (switches, radio devioeces, photocells etc.) have to be laid in separate sleeves.**
- **Only double-insulated cables, which are suitable for underground usage (e.g. E-YY-J) may be used.**  
**In case that special regulations require another type of cable, cables according to these regulations have to be used.**

**Features**

- Modulated infrared-active transmitter-receiver photocell for automatic doors and gates
- Selectable supply voltage 12/24V a.c./d.c. via jumper (J)
- Max. 30m range
- Easy surface mounting
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Dimensions in mm

We reserve the right to change dimensions and technical specifications without prior notice.!

**General**

The surface-mounted photocell LS 45/2 is a transmitter/receiver photocell, that can be used either with 12V or with 24V a.c./d.c., depending on the setting of the jumper (J). A green LED in the transmitter indicates the power supply and a red LED in the receiver indicates an interruption of the infrared beam. The photocell operates using a modulated infrared light. An interruption of the light beam causes a switching of electrical contact in the receiver.

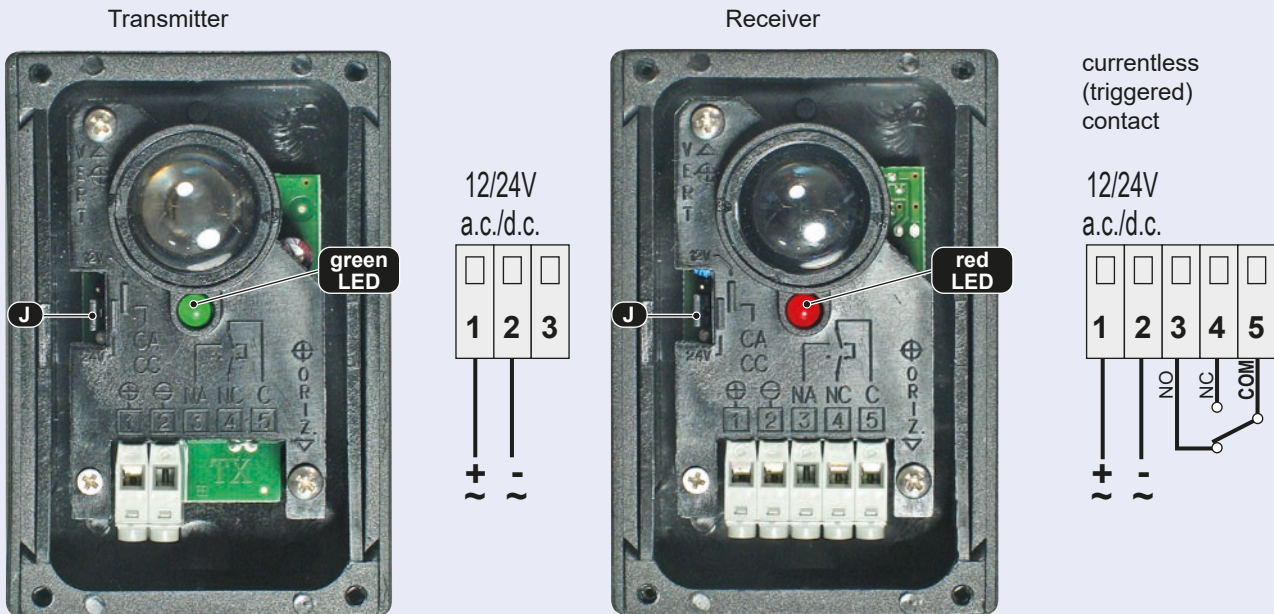
**Technical data**

Photocell LS 45/2	
Supply voltage	12V or 24V a.c./d.c. selectable via Jumper (J)
Power consumption	12Vd.c.: 59mA (0,7W)      24Vd.c.: 60mA (1,44W) 12Va.c.: 160mA (1,92W)    24Va.c.: 90mA (2,16W)
Signal	infrared
Reichweite	max. 30m (weather conditions and misalignment can reduce the coverage of up to 70%)
Max. ambient temperature	-20 to +60°C
Potential-free relay output	max. 24V/1A changeover
Protection class	IP65
Dimensions (HxWxD)	87 x 59 x 40mm
Article no.	13510350
Other features	easy surface mounting



## Important

- The LS 45/2 is a modulated infrared-active sender-receiver photocell and can be operated with 12V oder 24V a.c./d.c, depending on the setting of the **jumper (J)** of the photocell receiver-transmitter.
- In order to connect the photocells (LS) use 0.75 mm<sup>2</sup> connecting cable. As mentioned in this manual, these have to be connected to the terminals of the photocell transmitter and receiver. To connect them to the control unit please refer to the corresponding control unit instruction manual.
- Place the connection cable so that excess lengths are avoided.



Note: Contact between terminals 4 and 5 opens in case of beam interruption

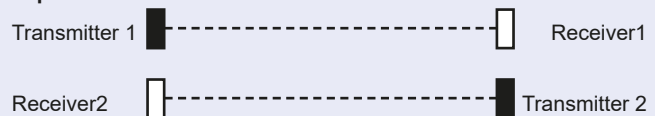


LED-display	
Transmitter LED (green)	ON: power supply OK
Receiver LED (red)	ON: no signal from transmitter (not aligned or infrared beam interrupted)
	OFF: stable signal from the transmitter

### Using two pairs of photocells:

- When using 2 pairs of photocells 45/2, in order to prevent mutual interferences, make sure that transmitter and receiver **are not be installed on the same side!**

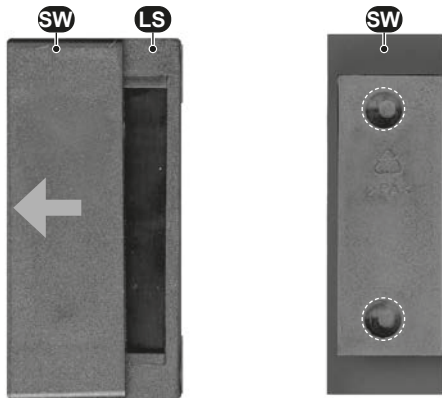
### Important:



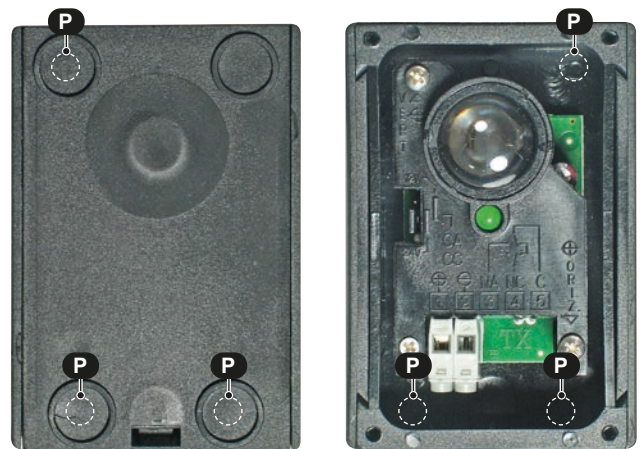
### 2a. Installation types

#### Mounting

- The photocell LS 45/2 can be mounted in a simple way by the lateral housing wall (left or right).
- The housing side wall (SW) has to be pushed out and fixed with two countersunk screws to a wall, a pillar or a gate pillar, as required - then the photocell (LS) can be pushed back.

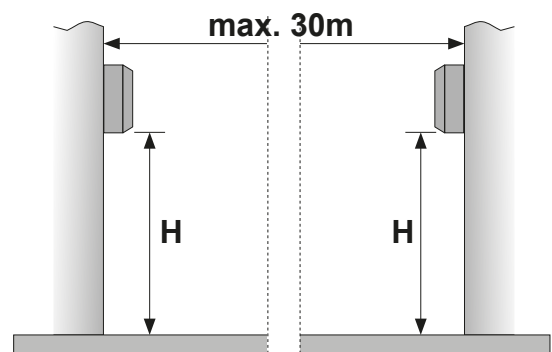


- The photocell can also be fitted with the rear panel to the designated position (P).



### Mounting positions

- Determine mounting positions for the transmitter and receiver. It is important to make sure that the mounting positions for the transmitter and receiver have the same axis alignment and that they are at the same height.
- It has to be taken into account that the height H has to be adapted accordingly to the site conditions and requirements.
- The max. range of 30m may be reduced of up to 70% by weather conditions or misalignment.
- Please observe the applicable guidelines for power-operated gates!

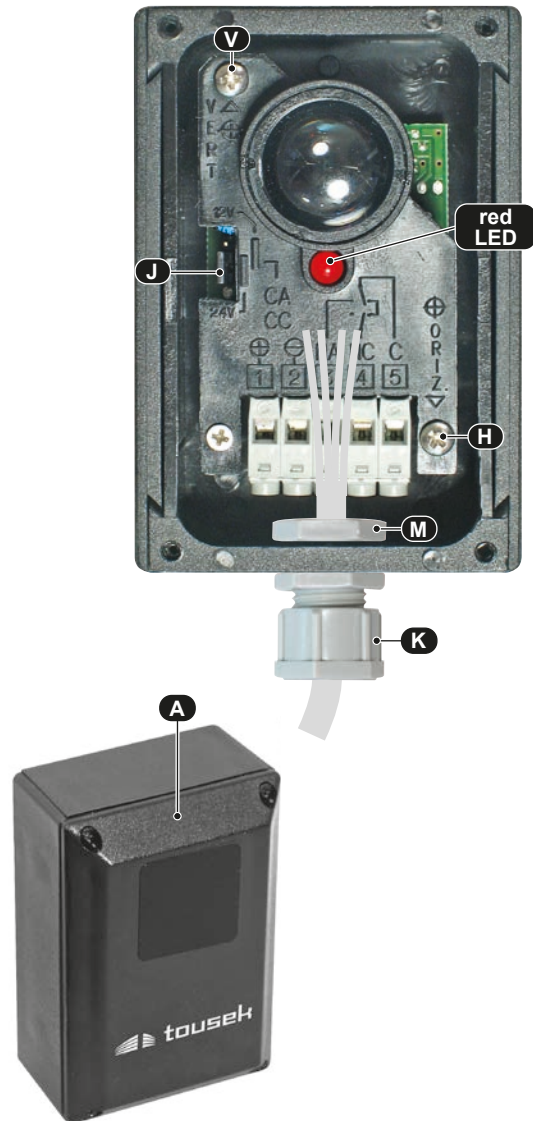


- After mounting the housing, the connections have to be carried out according to these instructions and the corresponding control unit instruction manual.
- in order to do that, disconnect the terminals on the transmitter (receiver) and lead the connection cable through the cable gland (**K**), the opening on the bottom of the housing and the nut (**M**) of the gland.
- Fix the cable gland to the housing.
- Carry out the necessary connections and put the clamps back on.
- Control the jumper setting (**J**) with respect to the intended supply voltage (12 or 24 V ac / dc).
- After performing all connections supply the voltage to the photocells and adjust.
- **For fine adjustments turn the screws into the photocell receiver. The screw (**V**) is for vertical alignment and the screw (**H**) is for horizontal alignment.**
- Interrupt the infrared beam several times to control the response of the relay (switching).



Everytime that the beam gets interrupted, the red LED of the receiver lights up.

- Replace the cover (**A**) and screw with the housing.



### Functionality test with the filter

- Weather conditions or misalignment can reduce the range of up to 70%. The enclosed filter (**Z**) is used to simulate these conditions.
- Apply the film either to the receiver or to the transmitter. The photocell has to be interrupted many times.
- At each interruption the red LED (receiver) should light up and actuate the relay.
- If the light barrier does not work properly, it means that the max. range has been reached or that the alignment needs to be corrected.



**IMPORTANT:** after carrying out the test don't forget to remove the filter

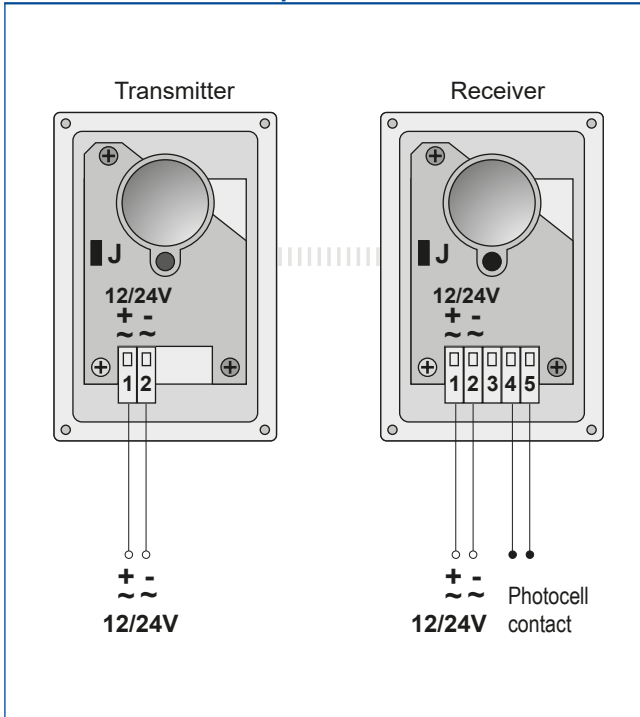




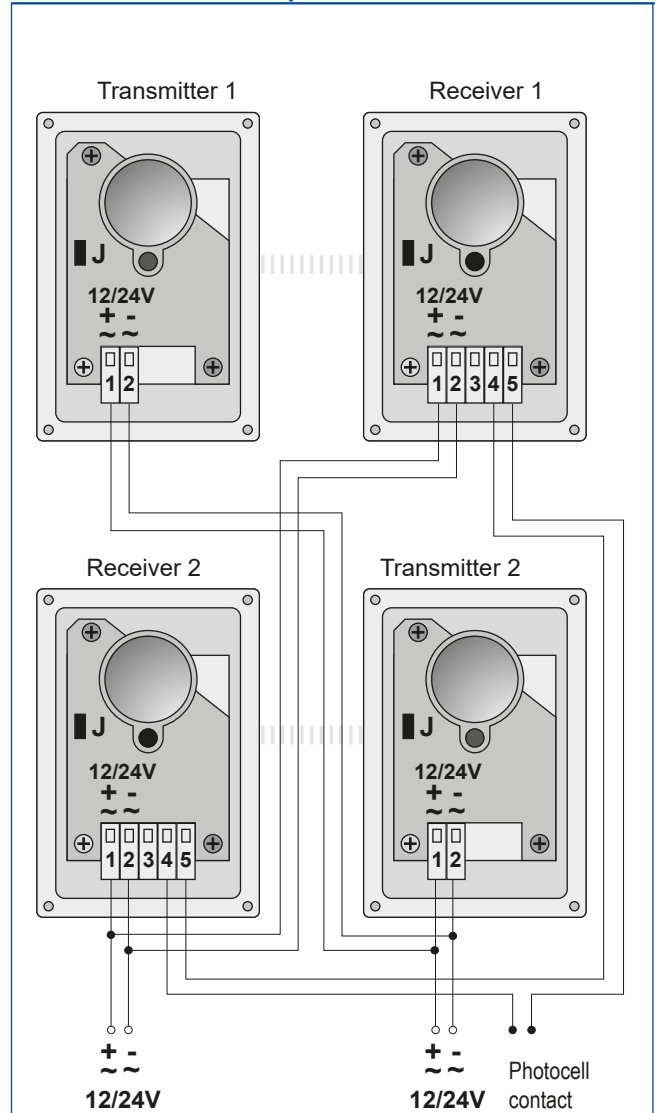
**Important**

- When connecting the photocells please pay attention to the notes and connection diagrams in the corresponding central unit/motor instruction manual!

**Connection: 1 photocell**



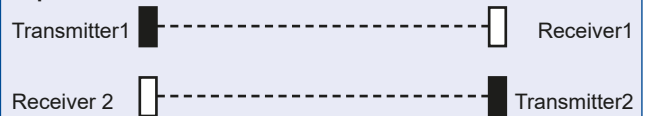
**Connection: 2 photocells**



**Important**

- To prevent mutual interference when using two pairs of photocells LS 45/2, make sure that the two photocell transmitters/ receivers are not be installed on the same side!

**Important :**



## **tousek PRODUCTS**

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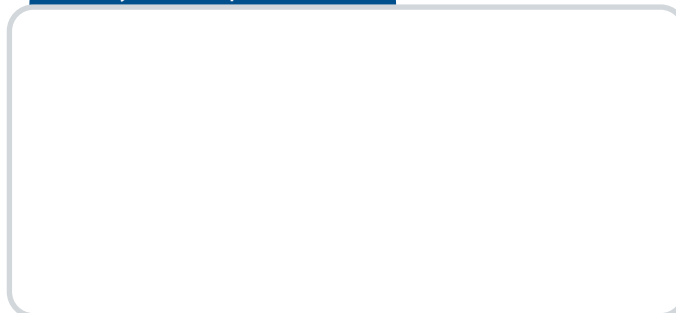
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