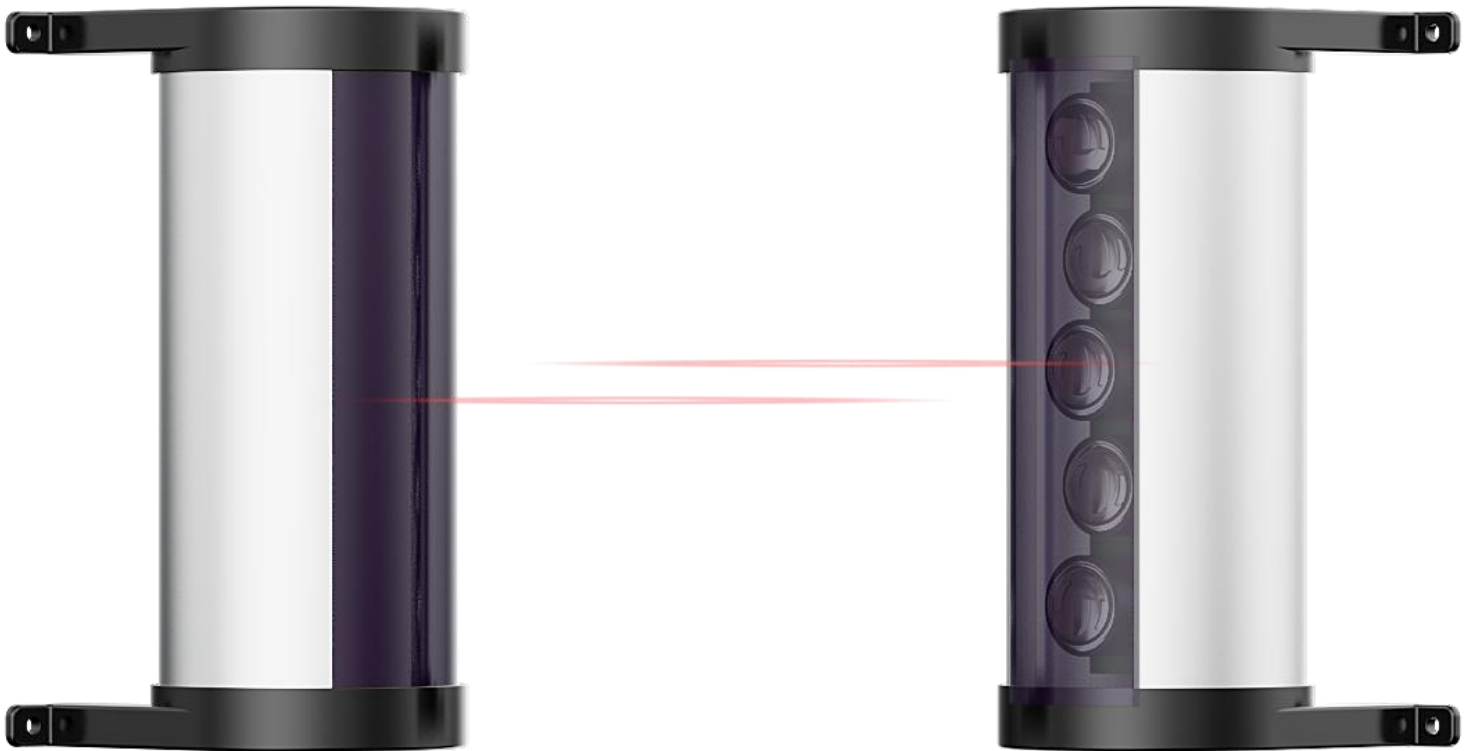


EMFUM –180° Adjustable Long-Range Safety Beam Sensor

EMFUM

User Manual V1.0





Please read the user manual carefully before using the device. Pay attention to the installation, electrical connection and initial start sections and follow the specified steps. The product owner/user should keep this user manual in a known and visible place throughout the life of the product.

- Store the product in a dry environment.
- This product can be used indoors and outdoors. For outdoor use, the installation must be done correctly.
- Batteries are not covered by the warranty in battery operated products. In products whose shelf life has expired, malfunctions caused by battery liquid discharge or leakage are not covered by the warranty.
- All service and repairs can only be done by Kontal Elektronik. The product should not be intervened by any other persons.
- The operating voltage of the product is described on its label. Do not power the product with a different source outside this voltage range.



If the product is used in violation of the above-mentioned items, it may cause fire, personal injury, or damage to the product or the structure in which the product is installed. Kontal Elektronik Ltd does not accept any responsibility for such situations caused by the user.

This exclamation mark will be used to highlight important points.



Do not touch supply input of the product with bare hands.

- ✓ This electric mark will be used to highlight electricity hazard.



- ✓ This sign on the label indicates that the supply voltage of the product is DC.



This symbol on the product or its box indicates that this product cannot be treated as normal household waste. Instead, the product should be delivered to designated collection points for the recycling of electronic equipment. Incorrect disposal of the product can have negative consequences for the environment and human health.



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1.DESCRPTION

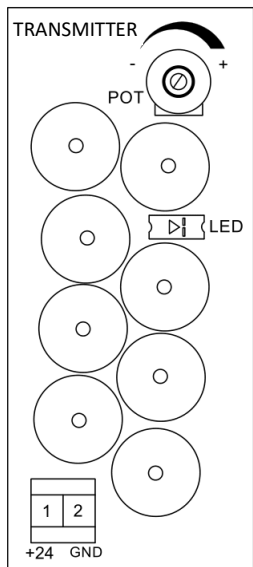
EMFUM is a unit that is manufactured for long-distance safety and control purposes and operates as a receiver (EMFUMA) and transmitter (EMFUMV) with infrared signals. The receiver and transmitter units are designed to be able to see each other at the most accurate angle on the horizontal plane when mounted on surfaces with different directions, with **± 90 degree angle adjustments**. If any obstacle comes in between, the system is outputted and control is provided. Detailed information about this product is given below.

2.TECHNICAL FEATURES

	180° Adjustable Long-Range Transmitter Safety Beam Sensor	180° Adjustable Long Range Receiver Safety Beam Sensor
Model	: EMFUMV	EMFUMA
Product Code	: K197-01	K197-02
Operating Voltage	: 12 – 24V DC	12 – 24V DC
Max. Current Value	: 30mA (MAX) @24V DC	21mA @24V DC
Count of Zone	: 8 pcs Transmitter Zone	1 pcs Receiver Zone
Operating Distance(MAX)	: 80 meters	80 meters
Operating Temperature	: -20 °C +55 °C	-20 °C +55 °C
Contact Type	: -	Dry Contact NO/NC
Minimum Contact Reaction Time	: -	150 ms (Receiver)
Maximum Contact Power	: -	60V DC 1A, 60V AC 1A
Weight	:429,2gr	409,6gr
Dimensions (Length x Diameter)	: 20,6 x 7,8 cm	20,6 x 7,8 cm

2.1. Transmitter Module Control Board

The control board of the long-range safety photocell transmitter module is shown in Figure 1. This board has 2 terminal connections, 1 signal transmission status LED, 8 transmitter signal eyes, and 1 trim pot (POT) used for adjusting the transmitter signal strength.



The terminal group on the transmitter module is dedicated to the required 12/24 DC voltage supply for the board. **When making this terminal connection, pay attention to the (+) and (-) directions.**

You can increase or decrease the signal strength sent by the transmitter using the trim pot (POT) on the transmitter module. Adjusting the trim pot in the clockwise (+) direction will increase the signal strength, while adjusting it in the counter clockwise (-) direction will decrease the signal strength. By increasing the signal strength, you can extend the operating range.

Transmitter

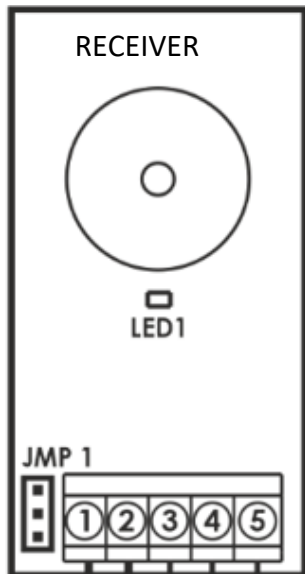
LED: POWER LED (flashes at intervals)

POT: Signal strength of the transmitter is increased in the (+) direction.
Signal strength of the transmitter is decreased in the (-) direction.

Figure 1: Transmitter Module

2.2. Receiver Module Control Board

The control board of the long-range safety photocell receiver module is shown in Figure 2. This board has 5 terminal connections, 1 contact LED, and 1 voltage selection jumper.



Terminals 1 and 2 on the receiver module are for 12/24 DC voltage supply. When making this terminal connection, **pay attention to the (+) and (-) directions**. Terminals 3, 4, and 5 are the relay output connection points for the receiver board.

Operating Voltage Selection

JMP1 jumper on the receiver module is used to determine the board's supply voltage.

**12V Power
Supply
JMP1**



**24V Power
Supply
JMP1**



Figure 2 : Receiver
Module

RECEIVER

LED1: Contact LED

When the photocells are in line of sight with each other, LED 1 on the receiver is off.

When the photocells are out of line of sight of each other, LED 1 on the receiver is on.

JMP1: When the jumper is connected to the upper pins, you need to supply 12V to the board, and when it is connected to the lower pins, you need to supply 24V.



Make your application by paying attention to the maximum power capacity of the output terminal (60V DC 1A, 60V AC 1A). These values should not be exceeded.

3.INSTALLATION

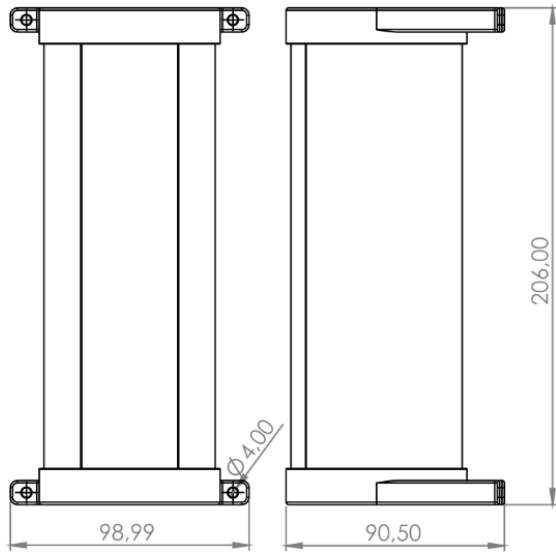


Figure 4 : Dimensions

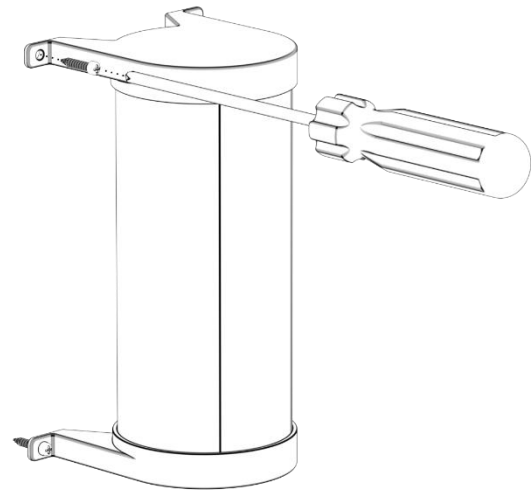


Figure 3 : Wall Mounting



When making your photocell connections, mount the receiver and transmitter units in the SAME DIRECTION SO THAT THEY SEE EACH OTHER.

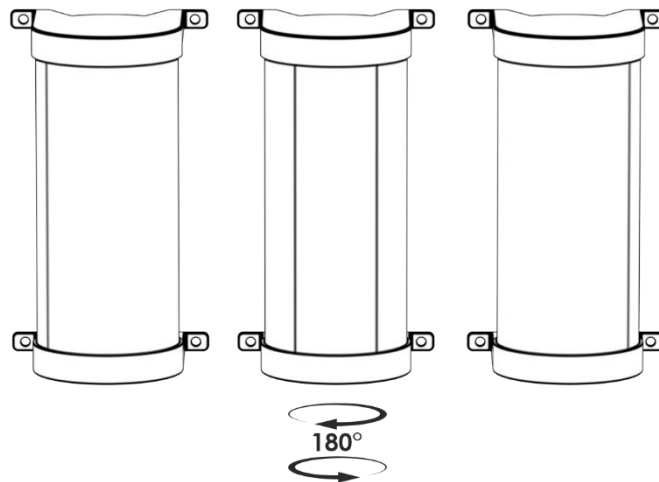


Figure 5 : Adjusting Mounting Angle

The receiver and transmitter units can be adjusted at an angle of $\pm 90^\circ$ on the horizontal plane.

4.CONNECTION SCHEMA

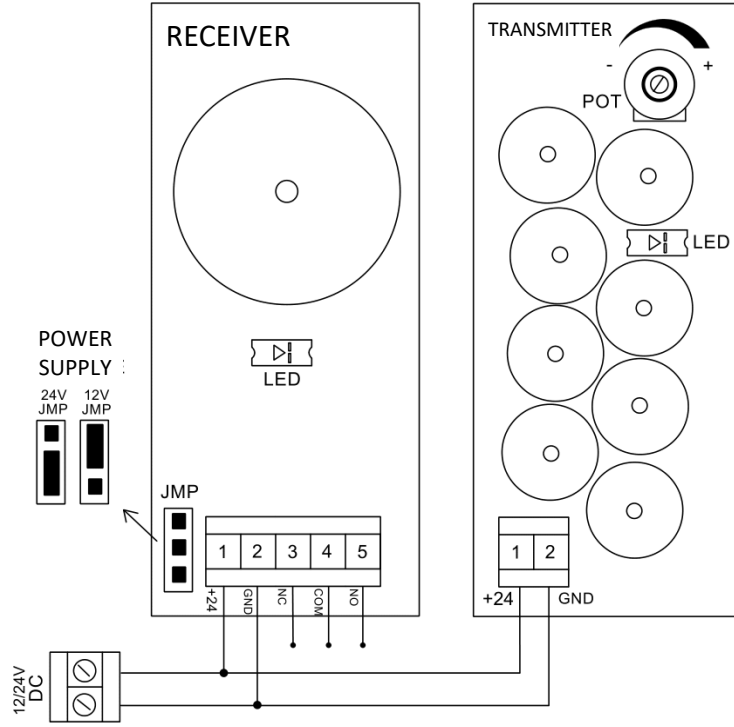


Figure 6 : Connection Schema

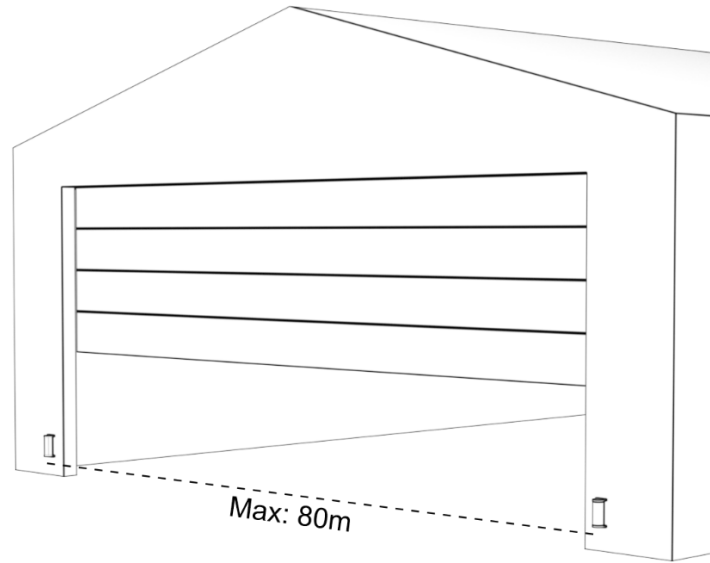


Figure 7 : Working Distance and Sample Application