



MF40

EN

USER'S AND INSTALLER'S MANUAL



motorline[®]
PROFESSIONAL



00. CONTENT

INDEX

01. SAFETY INSTRUCTIONS	1B
02. THE PRODUCT	
PRODUCT DESCRIPTION	4A
KIT COMPOSITION	4B
TECHNICAL CHARACTERISTICS	4B
ELECTRICAL CHARACTERISTICS	5A
DIMENSIONS	5A
03. INSTALLATION	
FIXING THE PHOTOCCELL	5B
INSTALLATION MAP	6A
04. CONNECTIONS	
CONNECTIONS - MF40BAT-TX	6B
CONNECTIONS - MF40-RX	7A
CONNECTIONS - MF40-TX	7B
CONNECTIONS - MF40EXT-LED	7B
05. CONNECTION DIAGRAM	
RGB SCHEME	8A
ONE COLOR SCHEME	8B

01. SAFETY INSTRUCTIONS

	This product is certified in accordance with European Community (EC) safety standards.
	This product complies with Directive 2011/65/EU of the European Parliament and of the Council, of 8 June 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment and with Delegated Directive (EU) 2015/863 from Commission.
	(Applicable in countries with recycling systems). This marking on the product or literature indicates that the product and electronic accessories (eg. Charger, USB cable, electronic material, controls, etc.) should not be disposed of as other household waste at the end of its useful life. To avoid possible harm to the environment or human health resulting from the uncontrolled disposal of waste, separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources. Home users should contact the dealer where they purchased this product or the National Environment Agency for details on where and how they can take these items for environmentally safe recycling. Business users should contact their vendor and check the terms and conditions of the purchase agreement. This product and its electronic accessories should not be mixed with other commercial waste.
	This marking indicates that batteries should not be discarded like other household waste at the end of their useful life. Batteries must be delivered to selective collection points for recycling.
	The different types of packaging (cardboard, plastic, etc.) must be subject to selective collection for recycling. Separate packaging and recycle it responsibly.
	This marking indicates that the product and electronic accessories (eg. charger, USB cable, electronic material, controls, etc.) are susceptible to electric shock by direct or indirect contact with electricity. Be cautious when handling the product and observe all safety procedures in this manual.

01. SAFETY INSTRUCTIONS

GENERAL WARNINGS

- This manual contains very important safety and usage information. Read all instructions carefully before beginning the installation/usage procedures and keep this manual in a safe place that it can be consulted whenever necessary.
- This product is intended for use only as described in this manual. Any other enforcement or operation that is not mentioned is expressly prohibited, as it may damage the product and put people at risk causing serious injuries.
- This manual is intended firstly for specialized technicians, and does not invalidate the user's responsibility to read the "User Norms" section in order to ensure the correct functioning of the product.
- The installation and repair of this product may be done by qualified and specialized technicians, to assure every procedure are carried out in accordance with applicable rules and norms. Nonprofessional and inexperienced users are expressly prohibited of taking any action, unless explicitly requested by specialized technicians to do so.
- Installations must be frequently inspected for unbalance and the wear signals of the cables, springs, hinges, wheels, supports and other mechanical assembly parts.
- Do not use the product if it is necessary repair or adjustment is required.
- When performing maintenance, cleaning and replacement of parts, the product must be disconnected from power supply. Also including any operation that requires opening the product cover.
- The use, cleaning and maintenance of this product may be carried out by any persons aged eight years old and over and persons whose physical, sensorial or mental capacities are lower, or by persons without any knowledge of the product, provided that these are supervision and instructions given by persons with experienced in terms of usage of the product in a safe manner and who understands the risks and dangers involved.

- Children shouldn't play with the product or opening devices to avoid the motorized door or gate from being triggered involuntarily.
- If the power cable is damaged, it must be replaced by the manufacturer, after-sales service or similarly qualified personnel to avoid danger.
- The device must be disconnected from the electrical network when removing the battery.
- Ensure that blocking is avoided between the actuated part and its fixed parts due to the opening movement of the actuated part.

WARNINGS FOR TECHNICIANS

- Before beginning the installation procedures, make sure that you have all the devices and materials necessary to complete the installation of the product.
- You should note your Protection Index (IP) and operating temperature to ensure that is suitable for the installation site.
- Provide the manual of the product to the user and let them know how to handle it in an emergency.
- If the automatism is installed on a gate with a pedestrian door, a door locking mechanism must be installed while the gate is in motion.
- Do not install the product "upside down" or supported by elements do not support its weight. If necessary, add brackets at strategic points to ensure the safety of the automatism.
- Do not install the product in explosive site.
- Safety devices must protect the possible crushing, cutting, transport and danger areas of the motorized door or gate.
- Verify that the elements to be automated (gates, door, windows, blinds, etc.) are in perfect function, aligned and level. Also verify if the necessary mechanical stops are in the appropriate places.
- The control board must be installed on a safe place of any fluid (rain, moisture, etc.), dust and pests.
- You must route the various electrical cables through protective tubes, to protect them against mechanical exertions, essentially on

01. SAFETY INSTRUCTIONS

the power supply cable. Please note that all the cables must enter the control board from the bottom.

- If the automatism is to be installed at a height of more than 2,5m from the ground or other level of access, the minimum safety and health requirements for the use of work equipment workers at the work of Directive 2009/104/CE of European Parliament and of the Council of 16 September 2009.
- Attach the permanent label for the manual release as close as possible to the release mechanism.
- Disconnect means, such as a switch or circuit breaker on the electrical panel, must be provided on the product's fixed power supply leads in accordance with the installation rules.
- If the product to be installed requires power supply of 230Vac or 110Vac, ensure that connection is to an electrical panel with ground connection.
- The product is only powered by low voltage safety with control board (only at 24V motors).
- Parts/products weighing more than 20 kg must be handled with special care due to the risk of injury. It is recommended to use suitable auxiliary systems for moving or lifting heavy objects.
- Pay special attention to the danger of falling objects or uncontrolled movement of doors/gates during the installation or operation of this product.

WARNINGS FOR USERS

- Keep this manual in a safe place to be consulted whenever necessary.
- If the product has contact with fluids without being prepared, it must immediately disconnect from the power supply to avoid short circuits, and consult a specialized technician.
- Ensure that technician has provided you the product manual and informed you how to handle the product in an emergency.
- If the system requires any repair or modification, unlock the automatism, turn off the power and do not use it until all safety

conditions have been met.

- In the event of tripping of circuits breakers or fuse failure, locate the malfunction and solve it before resetting the circuit breaker or replacing the fuse. If the malfunction is not repairable by consult this manual, contact a technician.
- Keep the operation area of the motorized gate free while the gate is in motion, and do not create strength to the gate movement.
- Do not perform any operation on mechanical elements or hinges if the product is in motion.

RESPONSABILITY

- Supplier disclaims any liability if:
 - Product failure or deformation result from improper installation use or maintenance!
 - Safety norms are not followed in the installation, use and maintenance of the product.
 - Instructions in this manual are not followed.
 - Damaged is caused by unauthorized modifications
 - In these cases, the warranty is voided.

MOTORLINE ELECTROCELOS SA.

Travessa do Sobreiro, nº29
4755-474 Rio Côvo (Santa Eugénia)
Barcelos, Portugal

SYMBOLS LEGEND:



• Important safety notices



• Useful information



• Programming information



• Potentiometer information



• Connectors information



• Buttons information

02. THE PRODUCT

PRODUCT DESCRIPTION

The MF40 series offers a versatile and efficient solution for protecting automatic doors and gates, ensuring safety in different working conditions and different locations. The photocells in this range can be adjusted horizontally by up to 180° and vertically by up to 10°, facilitating installation in different types of applications.

• MF40

The MF40 is designed to be powered directly by a continuous or alternating source, allowing stable operation at distances of up to 40 meters. This version is especially recommended for installations where external factors, such as smoke, fog or adverse weather conditions, may interfere with the normal operation of the system. Thanks to its extended range, this solution is ideal for larger gates or locations where the environment can cause signal loss.

• MF40BAT (version with battery)

This kit is battery powered and ideal for installations where there is no continuous power supply. MF40BAT can operate up to 20 meters distance between emitter and receiver, compatible with rechargeable and non-rechargeable batteries as per customer requirement. When used with rechargeable batteries, it is possible to integrate a compatible solar panel, ensuring continuous and stable operation over long periods. This version does not support light signaling due to high power consumption.

• MF40LED (version with integrated light signaling)

In addition to the features of the MF40, this version includes light signaling, making it an effective solution for indicating gate movement or passage. The lighting is integrated into the photocell, with four color options (red, green, blue and white), allowing greater visibility and safety. The white light can be replaced with blue by changing the jumper position on the lighting board.

Solar Panel Installation (optional)

For versions that use rechargeable batteries, correct installation of the solar panel is essential to ensure maximum absorption of sunlight and, consequently, efficient battery charging. The panel must be installed in a position where it is directly exposed to the sun, preferably facing south (in the northern hemisphere), with a slope that maximizes light capture throughout the day.



The receiver cannot be installed directly facing the sun.

02. THE PRODUCT

KIT COMPOSITION

MF40	MF40BAT	MF40LED
• MF40-TX	• MF40BAT-TX	• MF40LED-TX
• MF40-RX	• MF40-RX	• MF40LED-RX
• Manual	• Manual	• Manual
-	• Non-rechargeable battery (Rechargeable battery is optional)	-

TECHNICAL CHARACTERISTICS

MF40 MF40LED - TX	
• Tx power supply for control board	12/24 VAC/DC
• TX Absorption (Emitter):	45 mA at 24 VDC/VAC
• Wavelength	940nm
• Channels	Channel 1(10 kHz) – Channel 2(4 kHz)
• Range	Between 2m and 40m
• Orientality	Horizontal: 180° - Vertical: 10°
• Working temperature	-25°C to +70°C
• Protection class	IP54

MF40BAT	
• Power supply	3.6V AA batteries or 3.7V AA rechargeable batteries minimum 3.3v
• Solar Panel	4V 150mA monocrystalline
• Working frequency	940nm
• Working temperature	-25°C to +70°C
• Channels	Channel 1(10 kHz) – Channel 2(4 kHz)
• Range (With Panel and battery)	Greater than 1m up to 20m (for full Power); up to 10m (half power)
• Orientality	Horizontal: 180° • Vertical: 10°
• Protection Class	IP54
• TX Absorption (Emitter):	200 - 300 µA

MF40 MF40LED - RX	
• RX power supply	12/24 VAC/DC
• RX Absorption (Receiver):	45 mA at 24 VDC/VAC
• Wavelength	940nm
• Channels	Channel 1(10 kHz) – Channel 2(4 kHz)
• Range	Between 2m and 40m
• Orientality	Horizontal: 180° • Vertical: 10°
• Working Temperature	-25°C to +70°C
• Protection class	IP54
• Relay	125VAC/1A • 30VDC/0.5A

02. THE PRODUCT

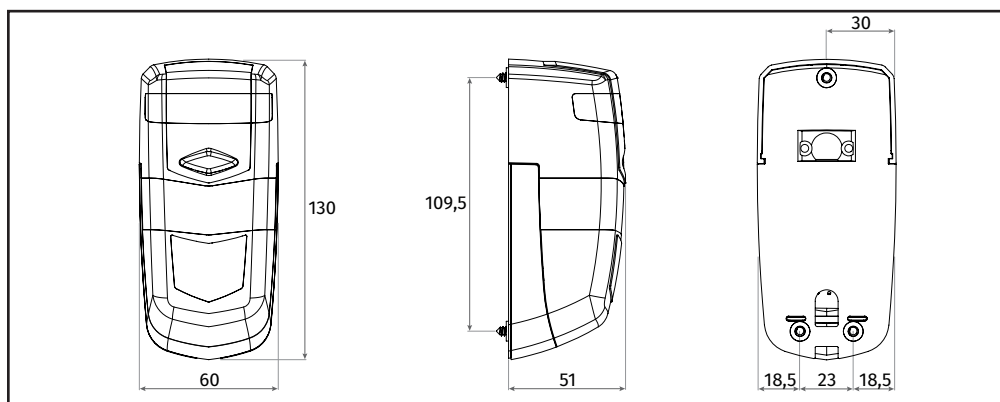
ELECTRICAL CHARACTERISTICS

MF40 MF40LED – TX				
• Modes	Tx			
• Voltage	12V		24V	
• Parameters	(mA)	(mW)	(mA)	(mW)
• Consumption (Normal)	10	120	10	240
• Consumption (+1 Input) (Only applicable to MF40LED)	12(W)	144	28(W)	670
	15(G)	180	24(G)	576
	28(R)	336	28(R)	670
	22(B)	264	26(B)	624

MF40TX - BAT		
• Modes	Tx	
• Voltage	3.6V – 3.3V	
• Parameters	(µA)	(mW)
• Consumption	200 - 350	0.6 – 1.05

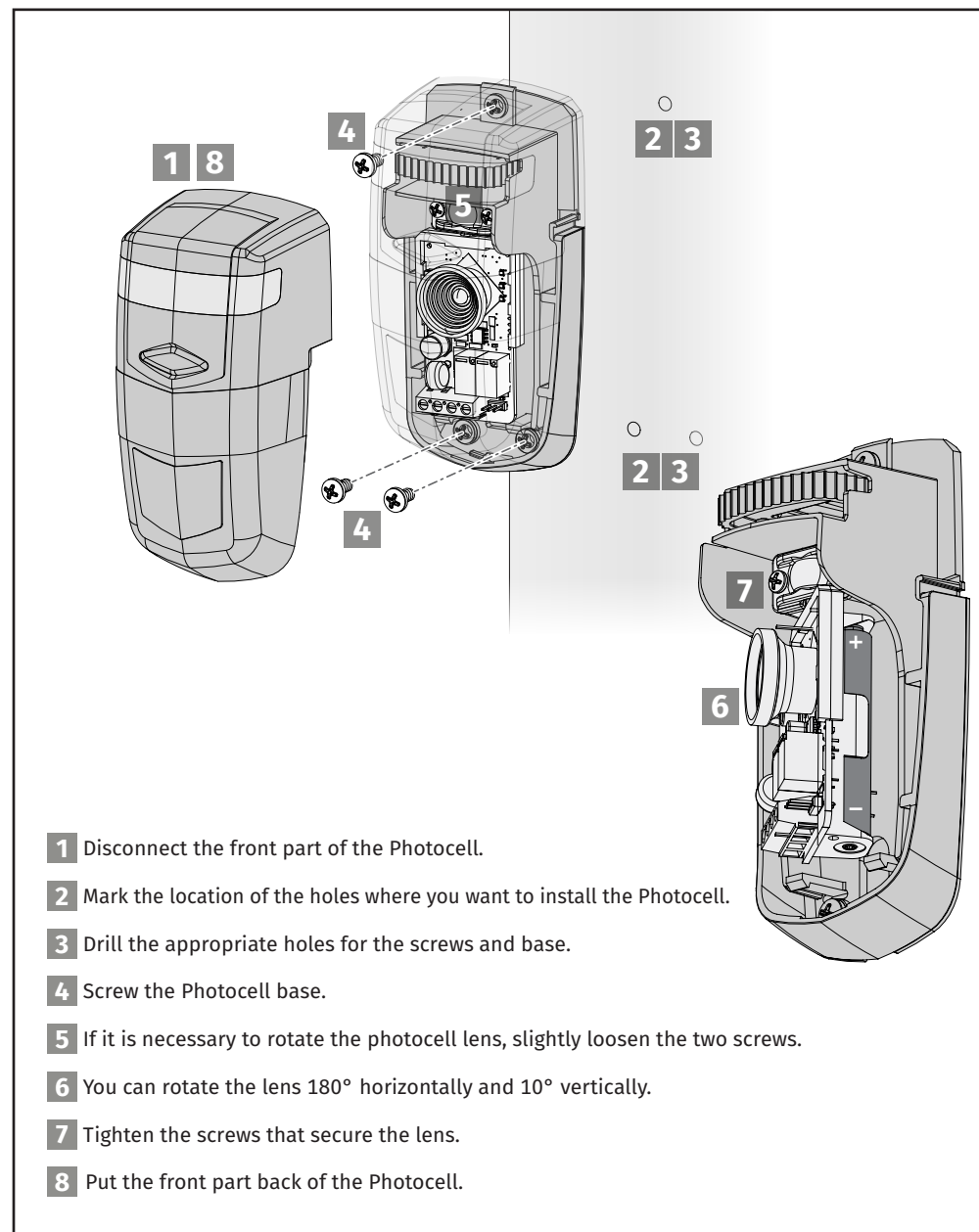
MF40 MF40LED - RX				
• Modes	Rx			
• Voltage	12V		24V	
• Parameters	(mA)	(mW)	(mA)	(mW)
• Standby	9	108	12	288
• Reception signal (LED ON) (Only applicable to MF40LED)	16(W)	192	41(W)	984
	15(G)	180	41(G)	984
	28(R)	336	50(R)	1200
	22(B)	264	22(B)	528

DIMENSIONS



03. INSTALLATION

FIXING THE PHOTOCELL

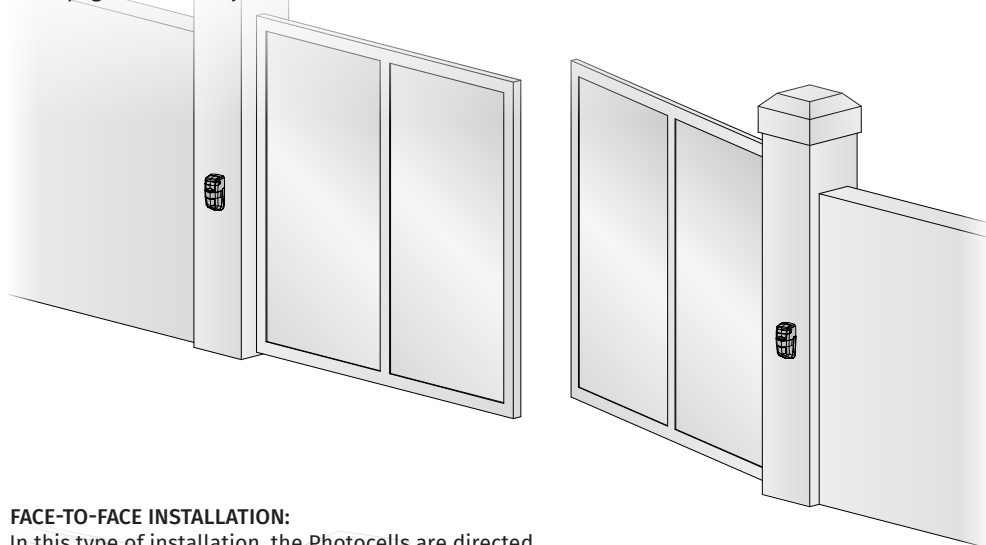


03. INSTALLATION

INSTALLATION MAP

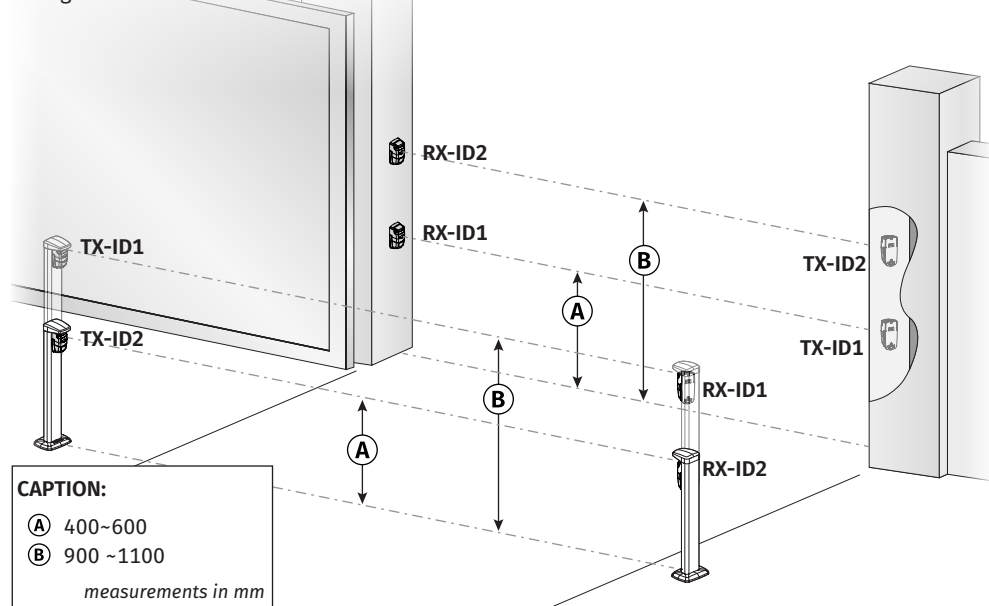
PARALLEL INSTALLATION:

The MF40 Photocells can be installed in parallel, just rotate their lens (see steps 5 and 6 on the previous page) so that they are oriented towards each other.



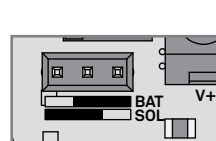
FACE-TO-FACE INSTALLATION:

In this type of installation, the Photocells are directed facing each other.



04. CONNECTIONS

CONNECTIONS - MF40BAT-TX

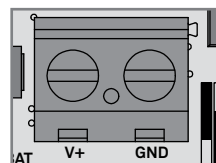


BAT • Selection when using non-rechargeable batteries and without panel.

Description: The batteries are 3.6V AA size.

SOL • When rechargeable batteries and solar panel are used.

Description: If a solar panel with rechargeable batteries is used, it will always be necessary to ensure that the panel has direct sunlight so that the photocell receives power supply.



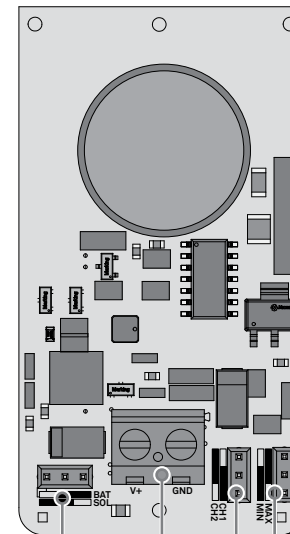
V+ • Positive for solar panel.

Description: Maximum voltage of 4.2V.

NOTE: Compatible with PS0406 panel (Motorline)

GND • Negative for solar panel.

Description: 0V.



MAX • Maximum power.

Description: Range of 20m (Distance may be affected by fog or direct sunlight).

NOTE: With the maximum power selected, battery consumption will be greater (Optimal use when used in conjunction with solar panel and rechargeable battery).

MIN • Minimum power

Description: The range in this mode increases to 10 meters (The distance may be affected by fog or direct sunlight).

NOTE: With this power selected, battery consumption can be extended. Great use if we want to work with non-rechargeable batteries.



CH1 • Channel 1 selection.

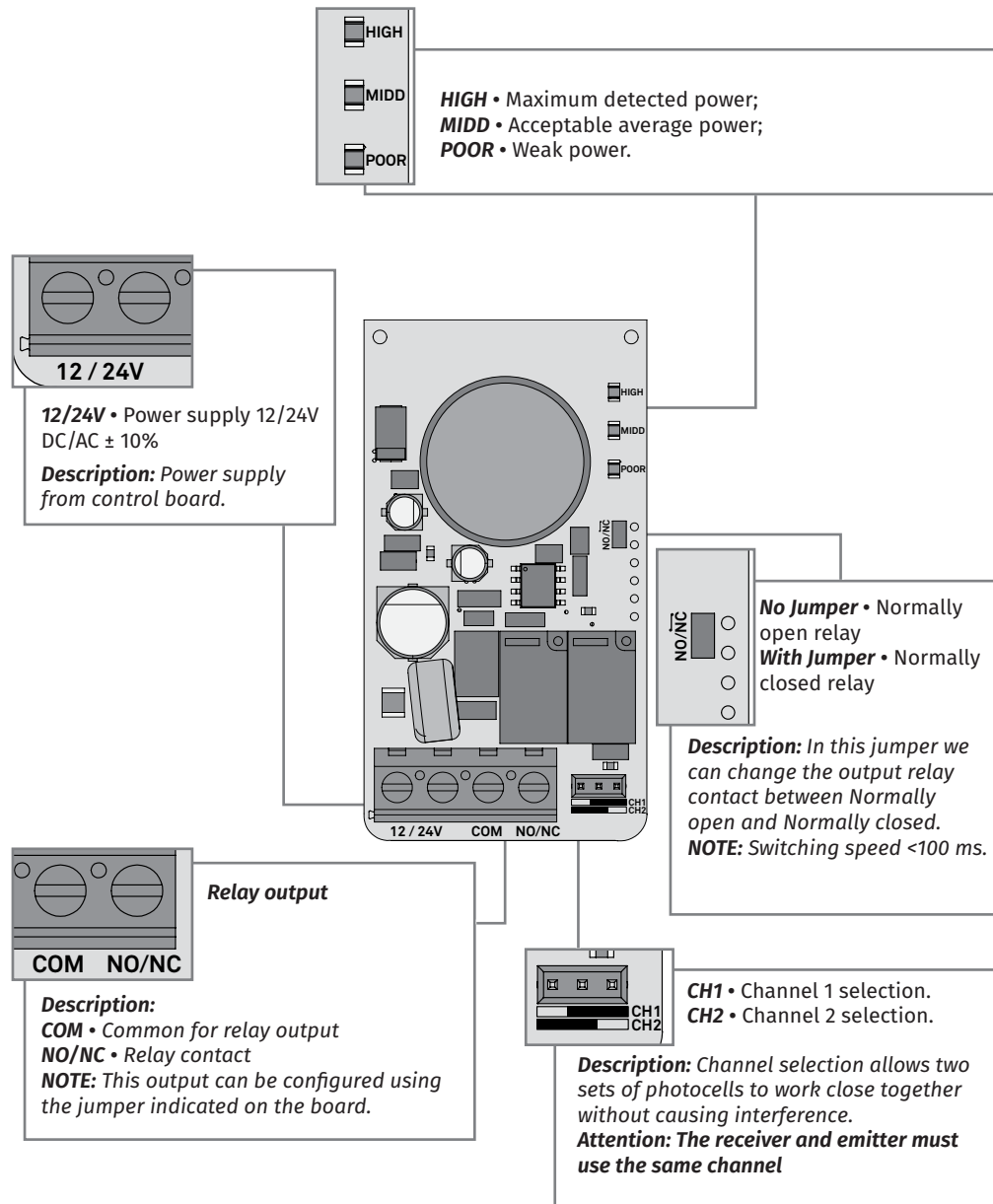
CH2 • Channel 2 selection.

Description: Channel selection allows two sets of photocells to work close together without causing interference.

Attention: The receiver and emitter must use the same channel

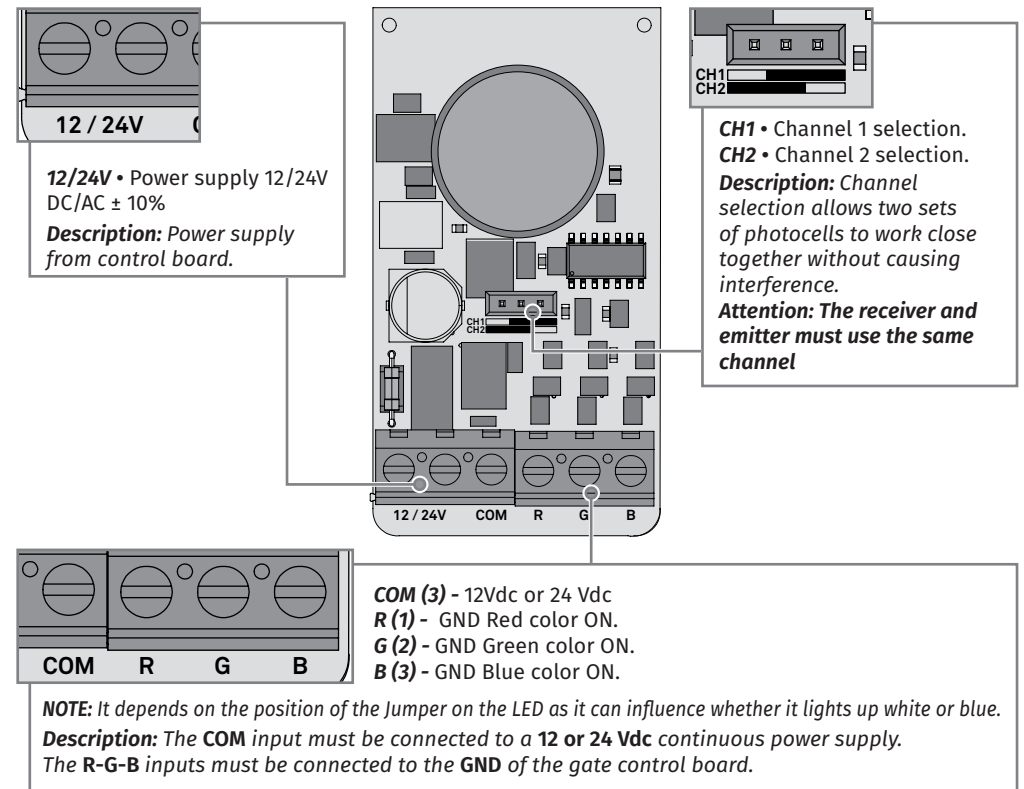
04. CONNECTIONS

CONNECTIONS - MF40-RX

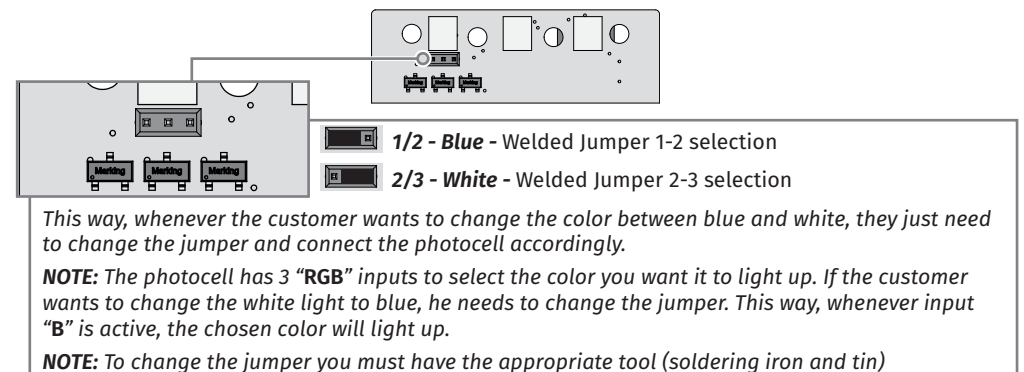


04. CONNECTIONS

CONNECTIONS - MF40-TX

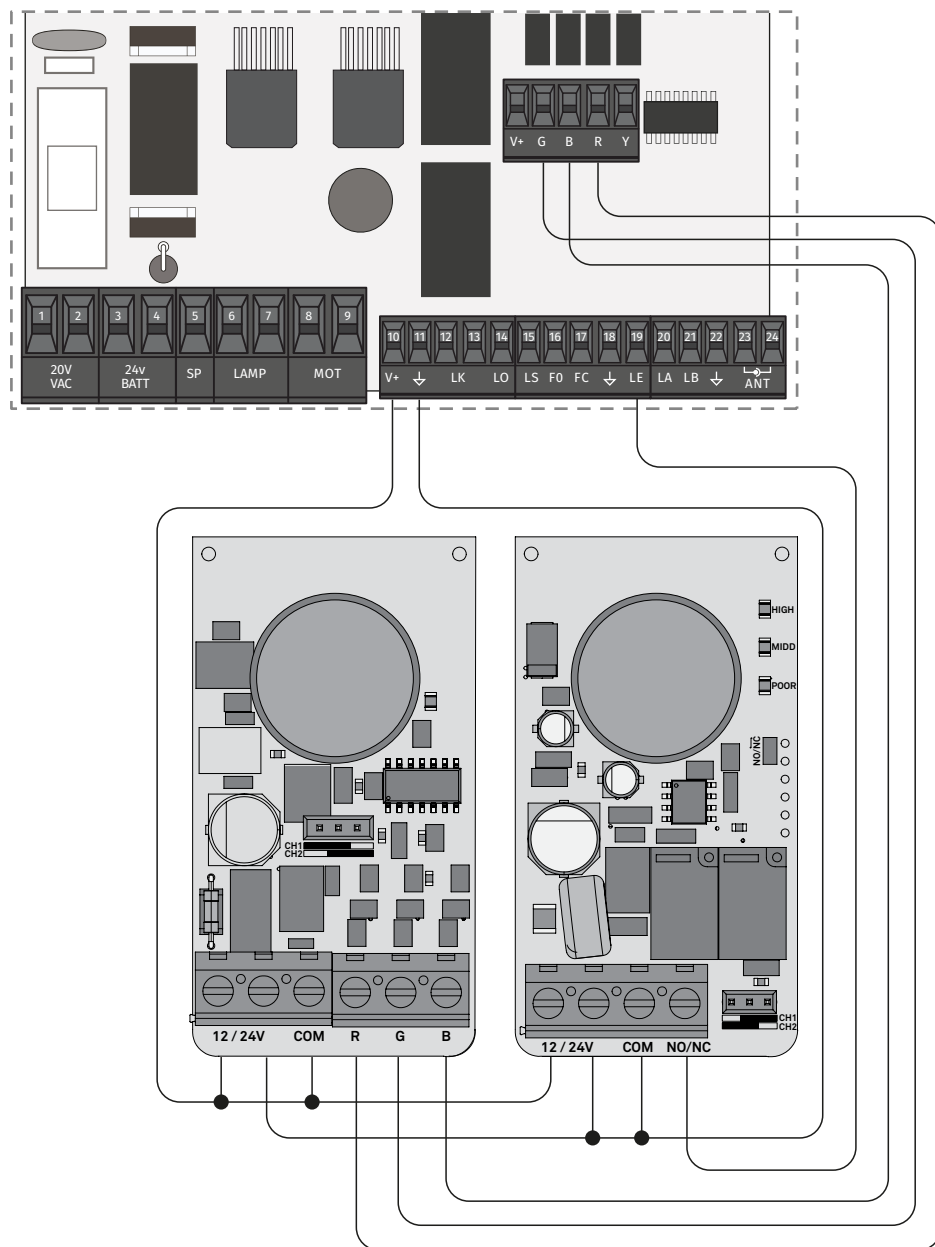


CONNECTIONS - MF40EXT-LED



05. CONNECTION DIAGRAM

RGB SCHEME



05. CONNECTION DIAGRAM

ONE COLOR SCHEME

