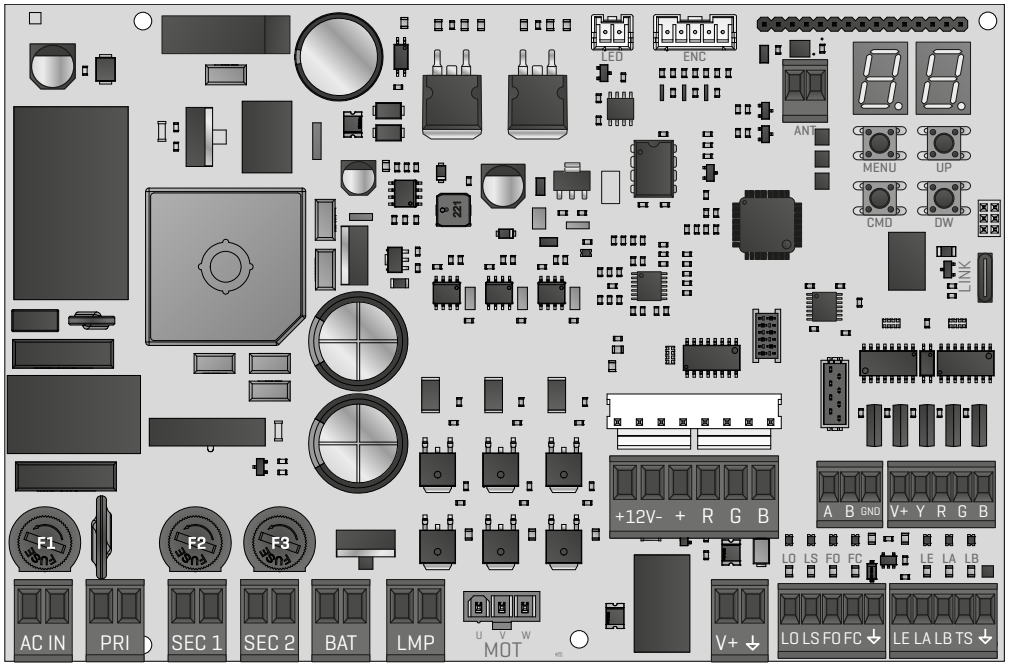
PORTUGAL

EN

MC90BL-BR-TUR

USER/INSTALLER MANUAL



COMPATIBLE WITH MCONNECT LINK

LOW POWER CONSUMPTION

COMPATIBLE WITH ECO DESIGN

Motorline® PROFESSIONAL

v4.5 REV. 10/2026
Compatible hardware versions:
HW 0.2.1 | FW H0.REV128

00. CONTENT

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Simplified EU Declaration of Conformity

The undersigned ***MOTORLINE ELECTROCELOS, S.A., with registered office at Travessa do Sobreiro, n.º 29, 4755-474 Rio Côvo (Santa Eugénia), Barcelos***, declares that the present type of radio equipment - **MC90BL-BR Control board** - ecomplies with the Directive 2014/53/EU.

The full text of the declaration of conformity is available at the following internet address:

https://motorline.pt/certification/mc90bl

01. SAFETY INSTRUCTIONS

CE	This product is certified in accordance with European Community (EC) safety standards.
RoHS	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 satefy 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 of 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 in 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


- Potentiometer information


- Useful information


- Connectors information


- Programming information

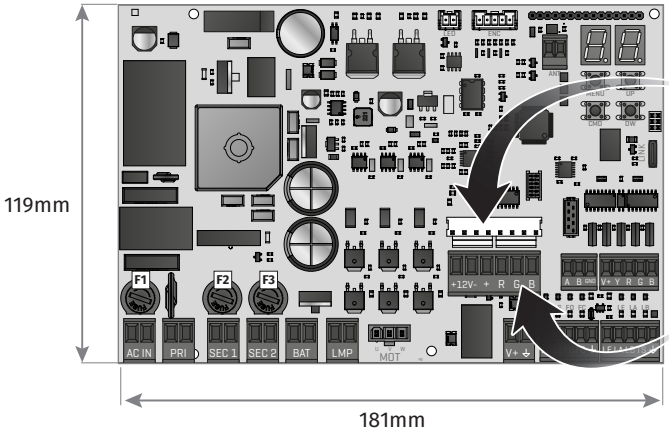

- Buttons information

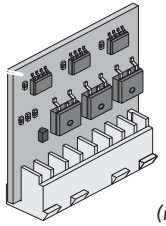
02. CONTROL BOARD

TECHNICAL SPECIFICATIONS

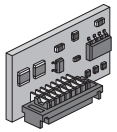
The MC90BL-BR is an electronic control board for controlling brushless motors with a built-in radio control system, developed for automating barriers.

• Main power supply	230Vac
• Motor power supply (SEC2)	20Vac
• Control board power supply (SEC1)	21Vac
• Flashing light's output	30Vdc 6W Max.
• RGB Flashing light's output	24Vdc 100mA Max.
• Motor's output	24Vdc 120W Max.
• Auxiliary accessories output	24Vdc 8W Max.
• Security device output and push button	24Vdc
• Working temperature	-25°C to + 55°C
• Incorporated Radio Receiver	433,92 Mhz
• Compatible transmitters	Rolling Code
• Maximum Memory Capacity	100 (total opening) - 100 (pedestrian opening)
• Control Board Dimensions	181x119 mm
• Fuse F1 | Fuse F2 | Fuse F3	2AL 250V | 1.6AL 250V | 10AL 250V
• Battery	MBAT26V2000 (recommended)
• Battery charging characteristics	29Vdc 0.35A Max.
• Consumption in standby (Eco design)	< 0.5W
• Consumption in standby (Standard)	5W





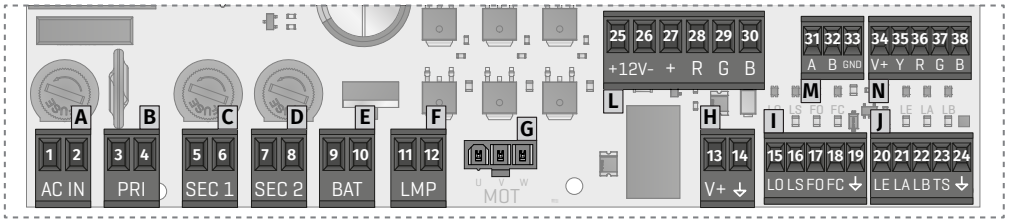
MM90-RGB
module
(not included)



M90-RS485
module
(not included)

02. CONTROL BOARD

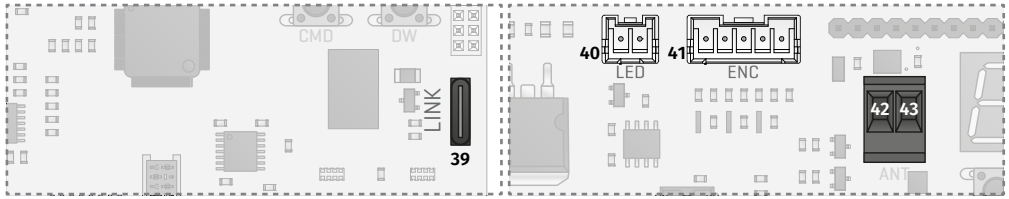
CONNECTORS



A	AC IN	**01** • 230Vac main power supply input **02** • 230Vac main power supply input	
B	PRI	**03** • 230Vac transformer power supply output **04** • 230Vac transformer power supply output	
C	SEC1	**05** • Input for power supply of the 21Vac control board **06** • Input for power supply of the 21Vac control board	
D	SEC2	**07** • Input for power supply of the 20Vac motor **08** • Input for power supply of the 20Vac motor	
E	BAT	**09** • 24Vdc Input for Emergency Battery 24V + max 7Ah **10** • 24Vdc Input for Emergency Battery 24V - max 7Ah	
F	LMP	**11** • 24Vdc Flashing light's Output (max 4W) **12** • 0V Flashing light's Output	
G	MOT	24Vdc Motor Output (max 120W)	
H	V+ ⏚	**13** • 24Vdc output for accessories (max 8W) **14** • 0V output for accessories power supply	
I	LO LS FO FC ⏚	**15** • NO input for Total maneuver Input **16** • NO input for Partial maneuver button **17** • Not used **18** • Not used **19** • Common	
J	LE LA LB TS ⏚	**20** • NC input for Photocells 1 **21** • NC input for Photocells 2 **22** • NC input for Stop device **23** • Photocell test output **24** • Common	
L	LED	**25** • +12Vdc input for powering the RGB strip on the boom **26** • 0Vdc input for powering the RGB strip on the boom **27** • +12Vdc output for RGB strip **28** • RGB output – Red **29** • RGB output – Green **30** • RGB output – Blue	⚠ *This connector only works if you apply the **MM90-RGB** module*
M	RS485	**31** • Signal A | **32** • Signal B | **33** • GND	
N	V+ Y R G B	**34** • Common Output +24vdc (max 4W) **35** • Output for Closed Barrier signal **36** • Output for barrier signal to close **37** • Output for barrier signal to open **38** • Output for Open Barrier signal	

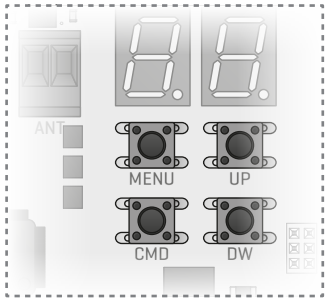
02. CONTROL BOARD

CONNECTORS



LINK	**39** • Type-C input for MCONNECT LINK connection
LED	**40** • Connector for flashing light RGB
ENC	**41** • Connector for motor encoder
ANT	**42** • Antenna connector (hot pole) **43** • Antenna connector (GND)

BUTTONS AND LEDs



MENU	Access the Menu
CMD	Remote controls programming
UP	Navigate through menus/values
DW	Navigate through menus/values

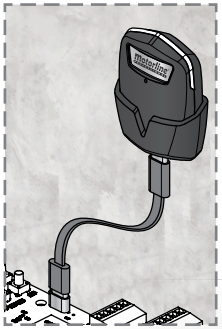


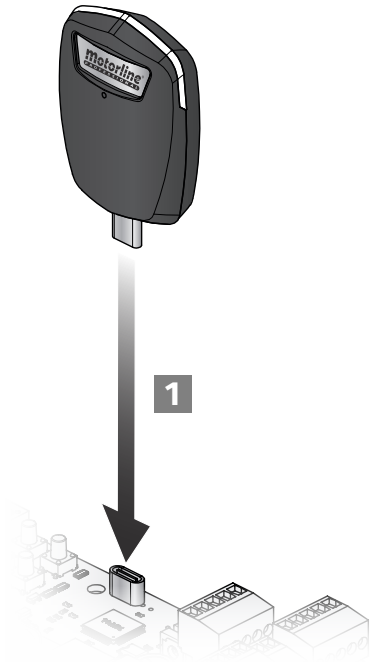
LO	LED ON when the full opening button is active
LS	LED ON when the pedestrian opening button is active
FO	LED OFF when the opening limit switch is active
FC	LED OFF when closing limit switch is active
LE	LED OFF when the signal from the photocells 1 is interrupted
LA	LED OFF when the signal from the photocells 2 is interrupted
LB	LED OFF when the Stop button is active
PWR	LED ON when power is supplied to the microcontroller

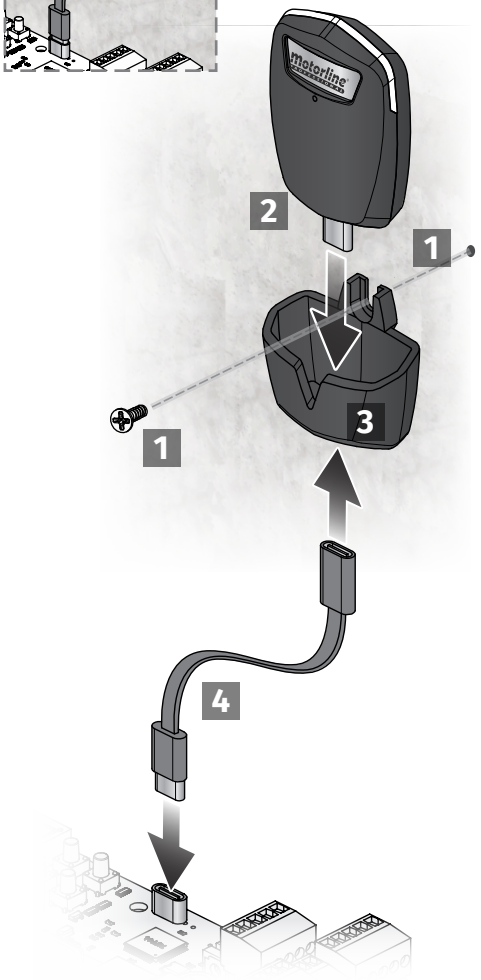
03. INSTALLATION

INSTALLATION OF MCONNECT LINK (OPTIONAL)









03. INSTALLATION

ESSENTIAL STEPS FOR INSTALLATION

01 • Make the connections of all the accessories according to the connection scheme (page 15 and 16).
02 • Connect the transformer to a power supply.
03 • Make sure that the barrier movement is the same as the one shown on the display:

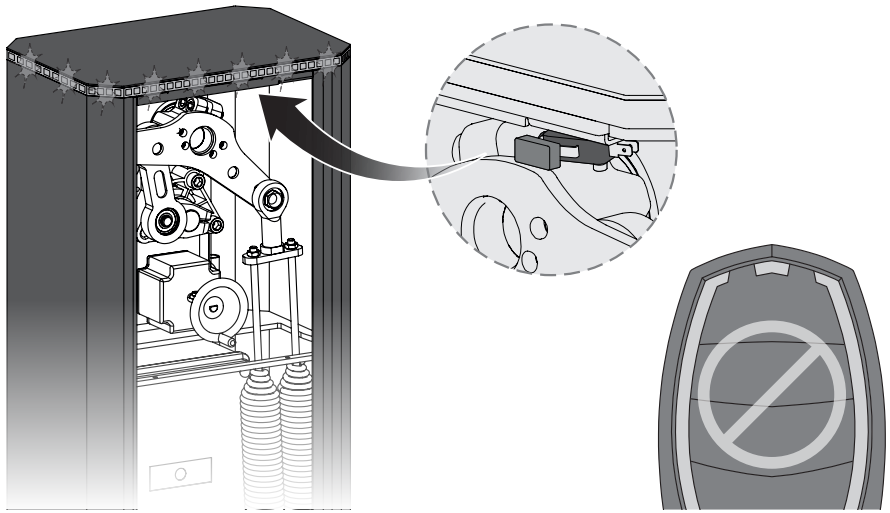
CL	OP
CLOSING	OPENING

⚠ If the display does not coincide with the movement of the barrier, change the opening direction parameter in P0->d1 to 1.

04 • Automatically program the course - **P0** menu (**page 7B**).
05 • If necessary, adjust the barrier slowdown time during opening and closing - **P1** menu (**page 8A**).
06 • Adjust the speed and sensitivity of the motor - **P2** menu (**page 8A**).
07 • Enable or disable the use of photocells in the **P5** menu (**page 9A**).
08 • Program a remote control(**page 6B**).

The control board is now fully configured!
Check the menus from the programming pages in case you wish to configure other features of the control board.

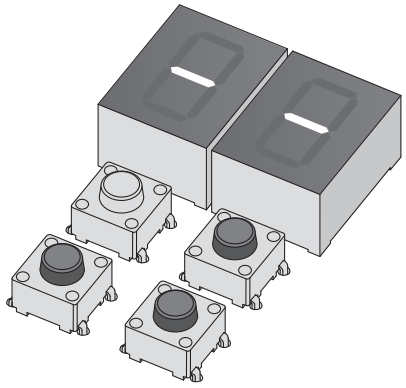
⚠ When the access door to the barrier mechanics is open, the control board is in security mode and does not accept opening orders.
To signal that the door is open, the flashing light flashes red.



04. PROGRAMMING

REMOTE CONTROLS

SU	**Programming a remote control for full opening**		--
SP	**Programming a remote control for pedestrian opening**		--
SL	**Function of programmed remote controls in SP** Allows to configurate the pesdestrian opening remote control for total opening.	00 Remote control for pedestrian opening. 01 Remote control for total opening.	00 (Default value)



REMOTE CONTROL PROGRAMMING

01 • Press the **cmd** button for 1 sec.
02 • Select the function where you want to program the remote controls (SU and SP) using ↓↑.
03 • Press **cmd** once to confirm the function (SU or SP).
04 • The first free position appears.
05 • Press the remote control button you want to program.
The display will blink and move to the next free location.

PROGRAM SL FUNCTION

01 • Press the **cmd** button for 1 sec.
02 • Select the SL function using ↓↑.
03 • Press **cmd** to enter the function.
04 • Use ↓↑ to change the value.
05 • Press MENU to save the new value.

DELETE REMOTE CONTROLS

01 • Press the **cmd** button for 1 sec.
02 • Select the function (SU or SP) using ↓↑.
03 • Press **cmd** once to confirm the function (SU or SP).
04 • Use ↓↑ to select the remote control location you want to delete.
05 • Press cmd for 3sec. and the position is empty.
The display will flash and the position will be available.

DELETE ALL THE REMOTE CONTROLS

01 • Press the **cmd** button for 5 sec.
02 • The display will show **dL**, confirming that all remote controls have been deleted.

ℹ • Whenever you store or delete a remote control, the display will flash and show the next position. You can add or delete remote controls without go back to point 01.
• If you do not press any button for 20 seconds the control board will return to standby.

04. PROGRAMMING

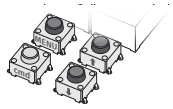
"P" MENU FUNCTIONS

MENU	FUNCTION	MIN.	MAX.	STATE	FACTORY VALUE	PAGE
P0	COURSE PROGRAMMING	-	-	AU Automatic Programming	-	7B
				nS 00 Disabled 01 Master 02 Slave	00	
				dI 00 Left opening 01 Right opening	00	8A
		0	7	HA Boom size selection	07	
		0	1	SO Solar mode	00	
		0	99	Ec Standby mode (Ecodesign)	01	
P1	SLOWDOWN ADJUSTMENT	0%	99%	dA Opening slowdown	30%	8B
				dC Closing slowdown	35%	
		0	9	rA Ramp time at start rc Ramp time in slowdown	01	
P2	SPEED AND SENSITIVITY ADJUSTMENT	0	9	SA Opening speed adjustment	02	8B
				Sc Closing speed adjustment	01	
				FS Sensitivity adjustment	05	
P3	PEDESTRIAN COURSE ADJUSTMENT	0%	99%	Opening setting in pedestrian mode	0%	9A
P4	PAUSE TIME	0s	99s	tC Total pause time adjustment	5s	9A
				tP Pedestrian pause time adjustment	0s	
P5	PHOTOCELLS 1 PROGRAMMING	-	-	CE 00 Disables photocells 01 Active photocells	00	9B
				HC 00 Photocells in opening 01 Photocells in closing	01	
				HO 00 Invert 01 Stop 02 Invert 2 sec. and Stop	00	
				Sc 00 Disable photocell test 01 Activates photocell test	00	
P6	PHOTOCELLS 2 PROGRAMMING	-	-	CA 00 Disables photocells 01 Active photocells	00	10A
				HC 00 Photocells in opening 01 Photocells in closing	00	
				HO 00 Invert 01 Stop 02 Invert 2 sec. and Stop	01	
				HA 00 Disables safety edge input 01 Activates safety edge input	00	
				Sc 00 Disable photocell test 01 Activates photocell test	00	

04. PROGRAMMING

"P" MENU FUNCTIONS

P7	OPERATING LOGIC	-	-	00 Automatic mode 01 Step by step mode 02 Condominium mode	02	10B
P8	FLASHING LIGHT	-	-	00 Flashing (opening and closing) 01 During movement 02 Courtesy light	00	10B
P9	REMOTE PROGRAMMING	-	-	00 Remote programming OFF 01 Remote programming ON	00	11A



- To access the **P menu** press the MENU button for 2 seconds.
- Use ↓↑ to navigate through the menus.
- Press MENU when you want to confirm access to a menu.
- Press ↓↑ simultaneously to exit programming.

PROGRAMMING "P"

P0 COURSE PROGRAMMING

AU **Automatic course programming**
This menu allows you to automatic programming of the motor and slowdown.

Automatic programming:
01 • Press MENU for 2 sec. until it appears P0.
02 • Press MENU once until it appears AU.
03 • Press MENU to start automatic programming.

The following maneuvers will be carried out:
a • Closes in slowdown (if it´s open).
b • Opens in slowdown.
c • Stops in the open position. Using the UP and DOWN buttons, adjust the opening position.
d • To save the opening position, press MENU.
e • Closes in slowdown.
f • Opens at normal speed.
g • Closes at normal speed.

⚠ **To cancel the programming press the UP and DOWN buttons simultaneously.**
You can use the remote control instead of the MENU button.

nS **Master/Slave**
Communication model for hardware devices where one device has one-way control over another device.
⚠ *To activate this parameter it is necessary to apply the **MM90-RS485** module.*

- **00** **Disabled**
- **01** **Master** Controls the main functions of the Slave.
- **02** **Slave** It is controlled by the Master.

00 (Default value)

PROGRAMMING "P"

dI	**Opening direction** Allows you to define the opening direction of the barrier.	00 Left opening 01 Right opening	00 (Default value)
HA	**Boom size selection** Allows you to configure the barrier speeds according to the selected boom size.	00 Boom up to 2.5m 01 Boom up to 3m 02 Boom up to 3.5m 03 Boom up to 4m 04 Boom up to 4.5m 05 Boom up to 5m 06 Boom up to 5.5m 07 Boom up to 6m	07 (Default value)
SO	**Solar mode** This menu allows you to shorten the start-up time of the control centre. ⚠ **For installations with the APOLO system.**	00 Disable Solar Mode 01 Activate Solar Mode	00 (Default value)
Ec	**Standby mode (Ecodesign)** Allows you to set the time it takes for the control board to enter low-power mode. Each value is equivalent to 30 seconds. **A value of 0 (zero) turns off low-power mode.** ⚠ **If external accessories are used, this mode must be turned off.** ***Standby mode (Regulation (EU) 2023/826)*** *In standby mode, the operator's power consumption is reduced in accordance with Regulation (EU) 2023/826. When this function is enabled and the operator enters standby, the power supply to the accessories is switched off. If the control devices need to remain active at all times, disable this function. Warning: with this function disabled, the control board's standby consumption exceeds the limit permitted by Regulation (EU) 2023/826.*		01 (Valor de fábrica)

01 • Press MENU for 2 sec. until it appears PO.
02 • Press MENU once until it appears AU. Use UP or DW to navigate the parameters.
03 • Press MENU to select the chosen parameter.
04 • The factory set value appears. Use UP and DW to change the value.
05 • Press MENU to save the new value.

04. PROGRAMMING

PROGRAMMING "P"

P1	**SLOWDOWN ADJUSTMENT** This menu allows to set the slowdown time at opening and closing.	
dA	**Opening slowdown** Allows to set the time that the barrier will act with slowdown in the opening (100% corresponds to full opening). **0=OFF**	30% (Default value) 0 — 99
dE	**Closing slowdown** Allows to set the time that the barrier will act with slowdown in the closing (100% corresponds to total closing). **0=OFF**	35% (Default value) 0 — 99
ra	**Ramp time at start** Allows you to define the acceleration ramp time when opening and closing.	01 (Default value)
rc	**Ramp time in slowdown** Allows you to define the deceleration ramp time when opening and closing.	0 — 9 **0=OFF** **1=0,2 | 5=1,1 | 9=2**

01 • Press MENU for 2 sec. until appears PO.
02 • Use UP to change to P1.
03 • Press MENU until appears dA. Use UP or DW to navigate the parameters.
04 • Press MENU to edit the chosen parameter value.
05 • The factory set time appears. Use UP and DW to change the value.
06 • Press MENU to save the new value.

P2	**SPEED AND SENSITIVITY ADJUSTMENT**	
So	**Opening speed adjustment**	02
Sc	**Closing speed adjustment**	01
FS	**Sensitivity adjustment** Allows to adjust the sensitivity of the motor when detecting obstacles. The higher the sensitivity, the less effort it will take to detect any obstacle and reverse direction.	05 (Default value) 0 — 9

01 • Press MENU for 2 sec. until appears PO.
02 • Use UP until appears P2.
03 • Press MENU will appear So. Use UP or DW to navigate the parameters.
04 • Press MENU to edit the value.
05 • The factory set time appears. Use UP and DW to change the value.
06 • Press MENU to save the new value.

⚠ A very low value in the So or Sc, parameters, or a very high value in the FS, parameter, can cause the motor to not have enough torque to move the boom.

PROGRAMMING "P"

P3 PARTIAL COURSE ADJUSTMENT

Partial mode allows the barrier to be opened to allow people to pass through.
In this function you can define the percentage of course that you want the barrier to open in partial mode, in relation to the total course (100%).

80% (Default value)



01 • Press MENU for 2 sec. until appears P0.
02 • Use UP until appears P3.
03 • Press MENU. The factory set time appears.
04 • Use UP and DW to change the value.
05 • Press MENU to save the new value.

P4 PAUSE TIME

AE	**Pause time adjustment for automatic closing** Allows you to set the waiting time for the barrier from when it finishes fully opening until it starts to close.	05s (Default value) 
AP	**Adjustment of pause time for automatic closing in partial closing** Allows you to define the waiting time from when partial opening ends until closing begins.	00s (Default value) 

01 • Press MENU for 2 sec. until appears P0.
02 • Use UP to change to P4.
03 • Press MENU until appears AE. Use UP or DW to navigate the parameters.
04 • Press MENU to edit the chosen parameter value.
05 • The factory set time appears. Use UP and DW to change the value.
06 • Press MENU to save the new value.

- When the values are at zero, there is no automatic closing.
- Each value (1s) selected above 90s is equivalent to 20 seconds.
  Example: Selecting the value 92**s** is equivalent to 130 seconds (**90 + (2 x 20)** seconds)

04. PROGRAMMING

PROGRAMMING "P"

P5 PHOTOCELLS 1 PROGRAMMING

Allows to program the security behavior LE (photocell 1).

LE	Enable or disable security entry.	00 Disable photocells 01 Activate photocells	00 (Default value)
AE	Allows you to define whether this security will act on the opening or closing of the barrier. ***This menu can only be changed when the LE menu is active.***	00 Photocells in opening 01 Photocells in closing	01 (Default value)
HL	It allows to define the behavior that the barrier will have when this security is activated.	00 The barrier movement is reversed 01 The barrier stops and resumes 5 sec after security is disabled 02 The barrier reverses for 2 sec. and stop	00 (Default value)
SE	**Photocell Test** Before each boom movement, the control board tests whether the photocells are working correctly, reducing the risk of accidents if they fail.	00 Disable photocell test 01 Activates photocell test	00 (Default value)

01 • Press MENU for 2 sec. until appears P0.
02 • Use UP until appears P5.
03 • Press MENU will appear LE. Use UP or DW to navigate the parameters.
04 • Press MENU to edit the chosen parameter value.
05 • The factory set time appears. Use UP and DW to change the value.
06 • Press MENU to save the new value.

PROGRAMMING "P"

P6	**PHOTOCELLS 2 PROGRAMMING** Allows to program the security behavior LA (photocell 2).			
LA	Enable or disable security entry.	00	Disable photocells	00 (Default value)
		01	Activate photocells	
AC	Allows you to define whether this security will act on the opening or closing of the barrier. ***This menu can only be changed when the LA menu is active.***	00	Photocells in opening	00 (Default value)
		01	Photocells in closing	
HL	It allows to define the behavior that the barrier will have when this security is activated.	00	The barrier movement is reversed	01 (Default value)
		01	The barrier stops and resumes 5 sec after security is disabled	
		02	The barrier reverses for 2 sec. and stop	
AA	Allows you to activate or deactivate the safety edge.	00	Disables 8k2 safety edge	00 (Default value)
		01	Activates 8k2 safety edge	
Sc	**Photocell Test** Before each boom movement, the control board tests whether the photocells are working correctly, reducing the risk of accidents if they fail.	00	Disable photocell test	00 (Default value)
		01	Activates photocell test	

01 • Press MENU for 2 sec. until appears P0.
02 • Use UP to change to P6.
03 • Press MENU until appears LA. Use UP or DW to navigate the parameters.
04 • Press MENU to edit the chosen parameter value.
05 • The factory set time appears. Use UP and DW to change the value.
06 • Press MENU to save the new value.

PROGRAMMING "P"

P7	**OPERATING LOGIC** This menu allows to set the operating logic of the automation.			
00	**Automatic Mode** Whenever there is an order the movement is reversed.			02 (Default value)
01	**Step by step mode** 1st impulse: **OPEN** 2nd impulse: **STOP** 3rd impulse: **CLOSE** 4th impulse: **STOP** If it is fully open and timed, it closes.			
02	**Condominium Mode** Does not respond to orders during opening and pause time.			

01 • Press MENU for 2 sec. until appears P0.
02 • Use UP until appears P7.
03 • Press MENU will appear 00.
04 • Press MENU to edit the value.
05 • Use UP and DW to change the value.
06 • Press MENU to save the new value.

P8	**FLASHING LIGHT** This menu allows to set the operation mode of the flashing light (LAMP).			
00	**Flashing (opening and closing)** During the opening/closing movement, the flashing light will operate intermittently. **Opening:** flashing 0,5sec. | **Closing:** flashing 0,25sec.			00 (Default value)
01	**During movement** During the opening/closing movement, the flashing light is permanently ON. **When stopped:** it remains off.			
02	**Courtesy light** During the opening/closing movement, the flashing light is permanently ON. **When in pause time:** it remains ON. **When stopped or closed:** it remains on for the time set in E2.			

01 • Press MENU for 2 sec. until appears P0.
02 • Use UP until appears P8.
03 • Press MENU will appear 00.
04 • Press MENU to edit the value.
05 • Use UP and DW to change the value.
06 • Press MENU to save the new value.

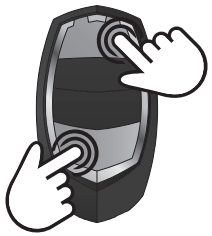
PROGRAMMING "P"

P9 REMOTE PROGRAMMING
This menu allows to enable or disable the programming of new remote control without directly accessing the control board, using a previously stored remote control (memorize remote controls page 6A).

00	REMOTE PROGRAMMING OFF	00 (Default value)
01	REMOTE PROGRAMMING ON	

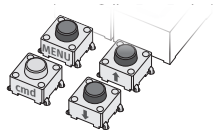
01 • Press MENU for 2 sec. until appears P0.
02 • Use UP until appears P9.
03 • Press MENU will appear 00.
04 • Press MENU to edit the value.
05 • Use UP and DW to change the value.
06 • Press MENU to save the new value.

REMOTE PROGRAMMING OPERATION (PGM ON):
Press the buttons indicated in the image simultaneously for 10 seconds and the flashing light will flash (the 1st free position appears in the display). Each time you store 1 remote control, the control board will exit remote programming. If you want to memorize more remote control, you will always have to repeat the process of pressing the remote controls buttons simultaneously for 10 seconds for each new remote control.



"E" MENU FUNCTIONS

MENU	FUNCTION	MIN.	MAX.	STATE	FACTORY VALUE	PAGE
E0	HUMAN PRESENCE	-	-	HP 00 Disables Human presence 01 Active at closing 02 Active during opening and closing	00	11B
				PU 00 Disables push buttons mode 01 Activates push buttons mode	00	
				LB 00 Disables LB input (STOP) 01 Activates LB input (STOP)	01	
E1	CALIBRATION	1	9	Allows you to calibrate the barrier's course with the encoder.	01	12A
E2	COURTESY LIGHT TIME	0	99	CE Courtesy light time adjustment PP Adjusting the pre-flashin light time	00	12A
E3	FOLLOW ME	-	-	FU 00 Desactivates follow me 01 Activates follow me (fully open) 02 Activates follow me (in open or fully open position)	00	12B
		1s	9s	tA Set closing time (sec)	03	
E4	OPERATION MODE WITH BATTERIES	-	-	00 Normal operation 01 Barrier opens and stays open 02 Barrier closes and remains closed	00	12B
E5	ELECTRIC BRAKE	-	-	00 Disabled 01 Low intensity 02 Medium intensity 03 High intensity	00	13A
E6	SLOWDOWN SPEED	1	9	SA Adjusting the slowing down at the opening	01	13A
		1	9	Sc Adjusting the slowing down at the closing	01	
E7	MANUEVERS COUNTER	-	-	Shows the number of maneuvers performed	-	13B
E8	RESET - RESTORE FACTORY SETTINGS	-	-	00 Deactivated 01 Reset activated	00	13B
E9	DOOR STATUS OUTPUT (Connector **K**)	-	-	AC 00 Continuous light 01 Flashing light	00	14A
	BOOM LEDs (Connector **I**)	-	-	HA 00 Off | Fixed 01 Off | Intermittent 02 Fixed | Intermittent 03 Fixed | Fixed	02	



- To access the **E menu** press the MENU button for 8sec.
- Use ↓↑ to navigate through the menus.
- Press MENU when you want to confirm access to a menu.
- Press ↓↑ simultaneously to exit programming.

PROGRAMMING "E"

E0 HUMAN PRESENCE/PUSHBUTTON

HP	**Human presence** ⚠ ***When human presence active, the RF remote controls do not work.*** ***For this menu to work, you must make the following configuration:*** E0 → PL → 01	00	**Disables human presence** Whenever an order is sent to the LO input and the barrier performs a complete maneuver
		01	**Active at closing** The motor only works if you keep the LS button pressed
		02	**Active during opening and closing** The motor only works if you keep the LO or LS button pressed depending on the desired action
			00 (Default value)
PL	**Pushbutton**	00	Disables pushbutton mode (LS: Partial opening | LO: Full opening)
		01	Active pushbutton mode (LS: Full closing | LO: Full opening)
			00 (Default value)
Lb	Allows you to define how the LB input works.	00	Disables LB input (Stop)
		01	Activates LB input (Stop)
			01 (Default value)

01 • Press MENU for 8 sec. until it appears E0.
02 • Press MENU until appears HP. Use UP or DW to navigate the parameters.
03 • Press MENU to edit the chosen parameter value.
04 • The factory set time appears. Use UP and DW to change the value.
05 • Press MENU to save the new value.

PROGRAMMING "E"

E1 CALIBRATION

This menu allows you to calibrate the barrier's course with the encoder when reaches the number of maneuvers selected for calibration.

The range of maneuvers for calibration corresponds to the formula: **value selected in the function x 50 maneuvers**.
Example: If the selected value is 3, it means that the calibration will be carried out every 150 maneuvers of the barrier (3x50= 150 maneuvers)

01 (Default value)
1 ◢ 9

01 • Press MENU for 8 sec. until it appears E0.
02 • Use UP until appears E1.
03 • Press MENU will appear 00.
04 • Press MENU to edit the value.
05 • Use UP and DW to change the value.
06 • Press MENU to save the new value.

E2 COURTESY LIGHT TIME

Lt	**Courtesy light time** Allows to adjust the courtesy light time. The courtesy light is activated the set time when the barrier is in the closed, opened and stopped position.	00min (Default value) 0 ◢ 99
PP	**Pre-flashing light time** Allows you to adjust the pre-flashing light time. ***If the value is 00 this function is deactivated.*** The pre-flashing light is activated before an opening and closing maneuver, operating intermittently (0.5 sec).	00s (Default value) 0 ◢ 99

01 • Press MENU for 8 sec. until appears E0.
02 • Use UP to change to E2.
03 • Press MENU until appears Lt. Use UP or DW to navigate the parameters.
04 • Press MENU to edit the chosen parameter value.
05 • The factory set time appears. Use UP and DW to change the value.
06 • Press MENU to save the new value.

PROGRAMMING "E"

E3 FOLLOW ME

EL	This menu allows activating the Follow me option. With this function activated, whenever the safety device detects the passage of a user/object, the control board activates the closing maneuver based on the time selected in this parameter.	00 **Function disabled**	00 (Default value)
		01 **Function activated after opening** The control board activates the closing only after completing the opening, based on the time defined in the E7 function	
		02 **Function activated during opening** The control board activates the closing after completing the opening, when, during opening, the user/object passes through the photocells, based on the time defined in the E7 function	
E8	**Closing time function** Allows you to define the waiting time between detection and the start of the closing maneuver after the safety device detects the passage of an object/ user.		03s (Default value) 1 – 9

01 • Press MENU for 8 sec. until E0 appears.
02 • Use UP until appears E3.
03 • Press MENU will appear EL.
04 • Press MENU to edit the value.
05 • Use UP and DW to change the value.
06 • Press MENU to save the new value.

E4 OPERATION MODE WITH BATTERIES

This menu allows you to define how the control board will operate on batteries in the event of a power failure.

00	**Normal operation**	00 (Default value)
01	The barrier opens and remains open until power to the control board is restored.	
02	The barrier closes and remains closed until power to the control board is restored.	

01 • Press MENU for 8 sec. until E0 appears.
02 • Use UP until appears E4.
03 • Press MENU will appear 00.
04 • Press MENU to edit the value.
05 • Use UP and DW to change the value.
06 • Press MENU to save the new value.

PROGRAMMING "E"

E5 ELECTRIC BRAKE

Allows you to set the intensity of the electric brake.

00	**Disabled**	01 (Default value)
01	**Low intensity**	
02	**Medium intensity**	
03	**High intensity**	

01 • Press MENU for 8 sec. until it appears E0.
02 • Use UP until appears E5.
03 • Press MENU will appear 00.
04 • Press MENU to edit the value.
05 • Use UP and DW to change the value.
06 • Press MENU to save the new value.

The electric brake must be used on barriers with long booms, where the inertia is greater, requiring more effort to stop

E6 SLOWDOWN SPEED

This menu allows you to adjust the slowdown speed.
The higher the level, the faster the slowdown.

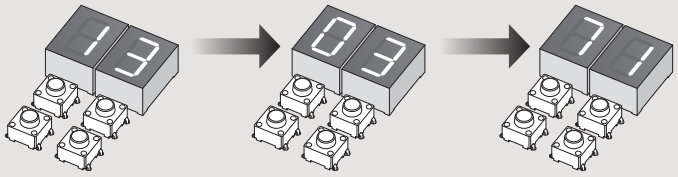
Sa	**Setting of the slowdown speed at the opening** Allows you to adjust the slowdown speed when opening.	08 (Default value) 1 – 9
Sc	**Setting of the slowdown speed at the closing** Allows you to adjust the slowdown speed when closing.	01 (Default value) 1 – 9

01 • Press MENU for 8 sec. until it appears E0.
02 • Use UP until appears E6.
03 • Press MENU will appear Sa.
04 • Press MENU to edit the value.
05 • Use UP and DW to change the value.
06 • Press MENU to save the new value.

PROGRAMMING "E"

E7 MANUEVERS COUNTER

This menu allows checking how many complete maneuvers were performed by the control board (complete maneuver means opening and closing).



Example:
130 371 maneuvers

1st Hundred thousand: **13**
2nd Thousands: **03**
3rd Dozens: **71**

01 • Press MENU for 8 seconds.
02 • E0 appears. Press UP until appears E7.
03 • Press MENU.
04 • The maneuver count appears in the order shown above (example 130 371).
05 • E8 appears.

E8 RESET - RESET FACTORY VALUES

00	**Disabled**	00 (Default value)
01	**Reset enabled**	

01 • Press MENU for 8 sec. until it appears E0.
02 • Use UP until appears E8.
03 • Press MENU will appear 00.
04 • Press MENU to edit the value.
05 • Use UP and DW to change the value.
06 • Press MENU to save the new value.

Resetting the control board does not erase the maneuver count.

PROGRAMMING "E"

E9 DOOR STATUS OUTPUT/BOOM LEDS

oC	**Door status output** Allows you to change the way this output will act. (**K connector** outputs)	00 Continuous light 08 Flashing light	00 (Default value)
HA	**Boom LEDs operating mode** Allows you to change the way this output will act. (**K connector** outputs)	00 Boom stopped: **Off** Moving boom: **Fixed** 01 Boom stopped: **Off** Moving boom: **Intermittent** 02 Boom stopped: **Fixed** Moving boom: **Intermittent** 03 Boom stopped: **Fixed** Moving boom: **Fixed**	02 (Default value)

01 • Press MENU for 8 sec. until it appears E0.
02 • Use UP until appears E9.
03 • Press MENU will appear oC.
04 • Use UP and DW to navigate the parameters.
05 • Press MENU to select the parameter.
06 • Use UP and DW to change the value.
07 • Press MENU to save the new value.

05. DISPLAY

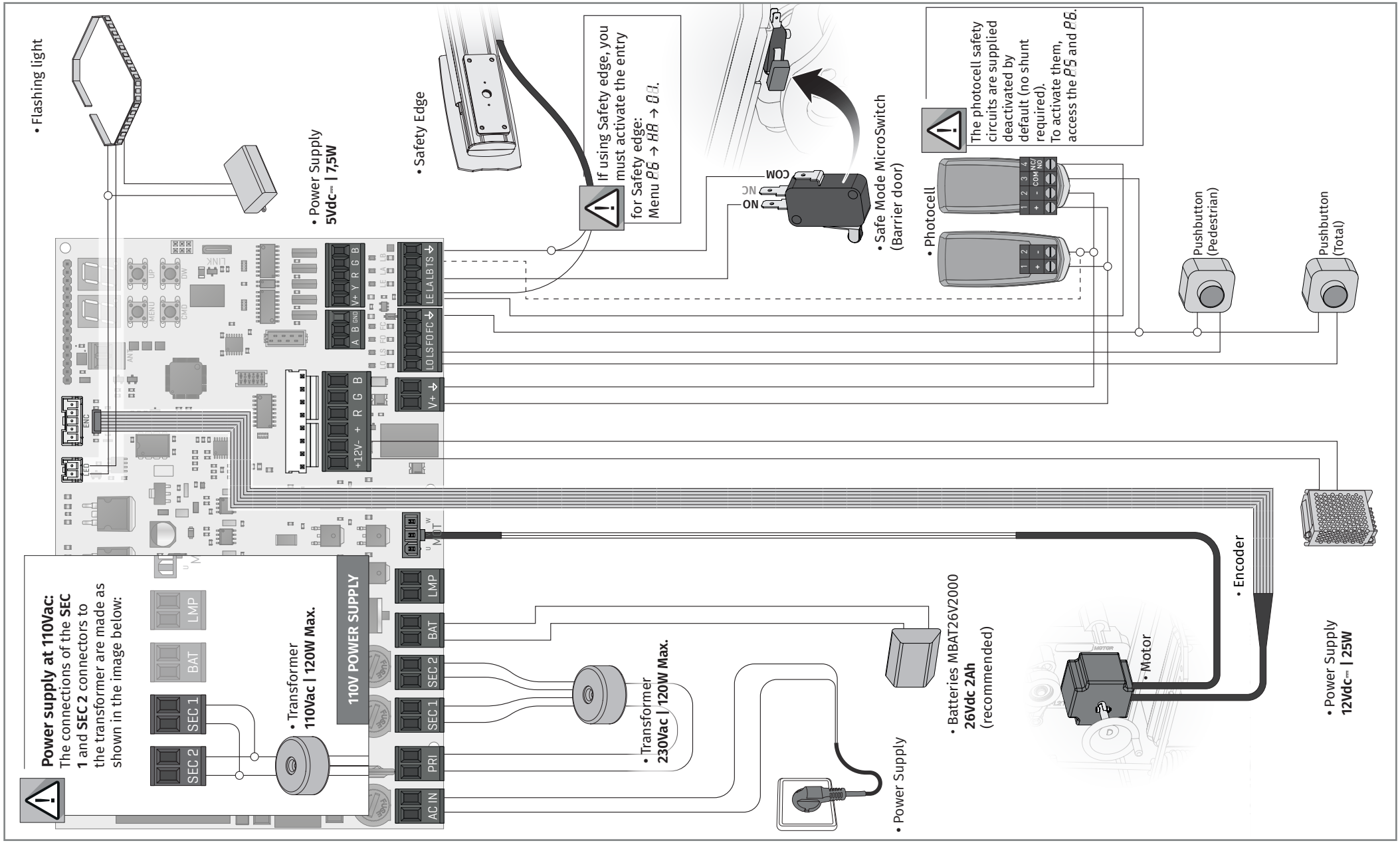
DISPLAY INDICATIONS

MENU	DESCRIPTION
AA	In stop position, fully open
AF	In stop position, intermediate position
AC	In stop position, fully closed
CO	Full opening button pressed
CS	Pedestrian opening button pressed
OP	Control board performs the opening course
CL	Control board performs the closing course
FO	End of opening course time
FC	End of closing course time
CU	Full memory
dL	All remote controls erased
00 01 02	Remote control triggered from the indicated position
CE	Obstructed photocell
CA	Obstructed photocell
AF	In pause time
AP	In pedestrian pause time
oA	Obstacle detection
Cb	Emergency device activated
HA	Safety edge pressed

MENU	DESCRIPTION
E1	Processing error
E2	Overvoltage error
E3	Under voltage error
E4	Startup error
E5	Encoder error
E6	EEPROM memory error
E7	Motor phase missing error
Sc	Photocell test failed
PP	Control board in Pre-Flashing lamp
OC	Motor overcurrent detection
nS	Communication failure between master and slave
nA	Invalid transmitter

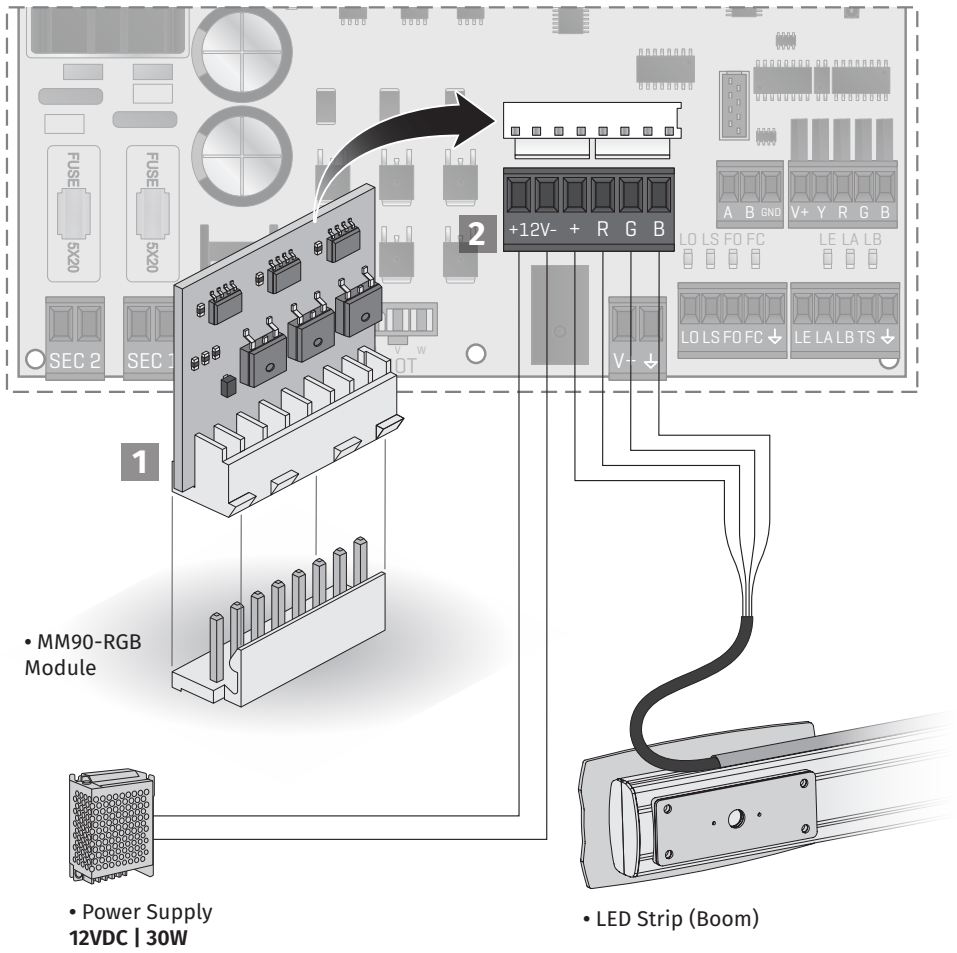
06. CONNECTION DIAGRAM

BARRIER



06. CONNECTION DIAGRAM

MM90-RGB MODULE (OPTIONAL)



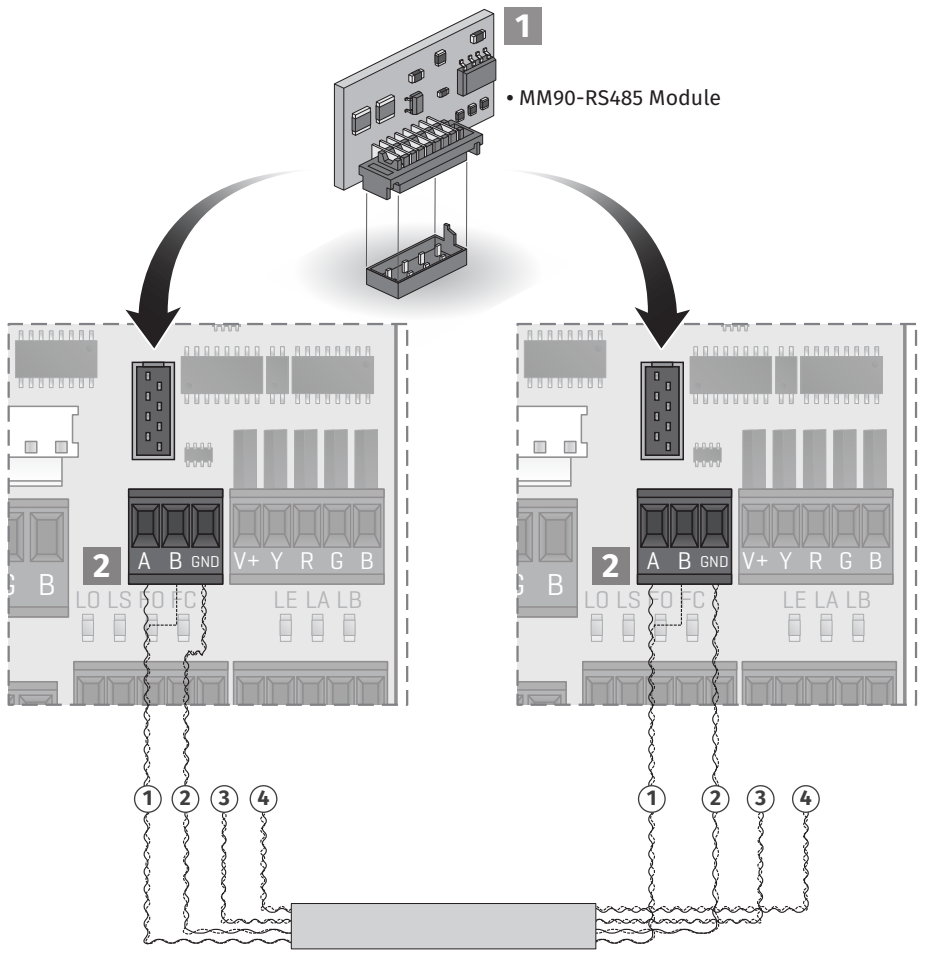
1 Insert the MM90-RGB module onto the control board;

2 Connect the LED Strip cables according to the diagram;

3 To configure the RGB module operating mode, see parameter E9 → HA.

06. CONNECTION DIAGRAM

MASTER / SLAVE (OPTIONAL)



1 Insert the MM90-RS485 module on the MASTER board and the SLAVE board;

2 Connect the two boards with a **UTP CAT 5** cable;

3 Sets the P0 → A5 parameter to 00 on the MASTER control board, and to 01 on the SLAVE control board.

4 Disable Eco mode in parameter P0 → Ec = 00 on the MASTER control board and on the SLAVE control board.

07. TROUBLESHOOTING

INSTRUCTIONS FOR FINAL CONSUMERS/TECHNICIANS

Anomaly	Procedure	Behavior	Procedure II	Discovering the origin of the problem
• Motor doesn't work.	• Make sure you have power supply connected to the automatism and if it is working.	• Still not working.	• Consult a MOTORLINE technician.	**1** • Open control board and check if it has power supply. **2** • Check input fuses of the control board. **3** • If the motor works, the problem is on the control board. Pull it out and send it to our MOTORLINE technical services for diagnosis. **4** • If the motor doesn't work, remove from installation site and send it to our MOTORLINE technical services for diagnosis.
• Motor doesn't move but makes noise.	• Unlock the motor and move the barrier by hand to check for mechanical problems.	• Encountered problems?	• Consult a qualified technician in barriers.	Check all motion axis and associated motion systems related with the barrier to find out what is the problem.
		• The barrier moves easily?	• Consult a MOTORLINE technician.	**1** • If the motor works, the problem is with control board. Pull it out and send it to our MOTORLINE technical services for diagnosis. **2** • If the motor doesn't work, remove it from installation site and send it to our MOTORLINE technical services for diagnosis.
• Motor opens but doesn't close.	• Unlock the motor and move the barrier by hand to closed position. Block the motor again. Turn off power supply for 5 seconds, and reconnect. Send order to open using remote control.	• The barrier opened but didn't close again.	**1** • Check if there is any obstacle in front of the photocells. **2** • Check if any of the control devices (Key Selector, Pushbutton, Video Intercom, etc.) are stucked and sending permanent signal to control board. **3** • Consult a MOTORLINE technician.	All control boards MOTORLINE have LEDs that easily allow to conclude which devices are with anomalies. All safety device (DS) LEDs in normal situations remain ON. All "START" circuits LEDs in normal situations remain Off. If LEDs devices are not all On, there is some security systems malfunction (photocells, safety edges). If "START" LEDs are on, there is some remote control device emitting a permanent signal. **A) SECURITY SYSTEMS:** **1** • Close with a shunt all safety systems on the control board. If the automated system starts working normally check for the problematic device. **2** • Remove one shunt at a time until you find the malfunction device. **3** • Replace it for a functional device and check if the automation works correctly with all the other devices. If you find another one defective, follow the same steps until you find all the problems. **B) START SYSTEMS:** **1** • Disconnect all wires connected to the START connector (LO and LS). **2** • If the LED turned OFF, try reconnecting one device at a time until you find the defective device. **NOTE:** In case procedures described in sections A) and B) don't result, remove control board and send it to our MOTORLINE technical services for diagnosis.
• Motor doesn't make complete course.	• Unlock the motor and move the barrier by hand to check for mechanical problems.	• Encountered problems?	• Consult a qualified technician in barriers.	Check all motion axis and associated motion systems related with the barrier to find out what is the problem.
		• The barrier moves easily?	• Consult a MOTORLINE technician.	**1** • If the motor doesn't work, remove it from installation site and send it to our MOTORLINE technical services for diagnosis. **2** • If the motor works well and move the boom at full force during the entire course, the problem is with control board. Set force using trimmer on the board. Make a new working time programming, giving enough time for opening and closing with appropriate force. **3** • If this doesn't work, remove control board and send it to MOTORLINE technical services. **NOTE:** Setting force of the control board should be sufficient to make the barrier open and close without stopping, but should stop and invert with a little effort from a person. In case of safety systems failure, the barrier shall never cause physical damaged to obstacles (vehicles, people, etc.).