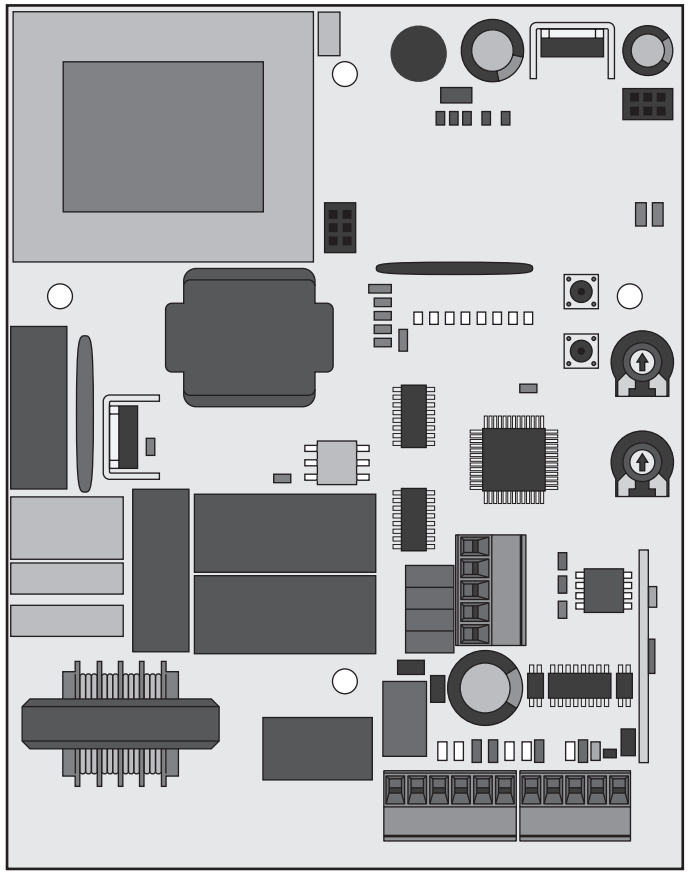
EN

MC15BA

USER / INSTALLER MANUAL



Motorline® PROFESSIONAL

v2.0
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00. CONTENT

INDEX

01. SAFETY INSTRUCTIONS

STANDARDS TO FOLLOW

ATTENTION:

• To ensure the people's safety, it is important that you read all the following instructions.
Incorrect installation or incorrect use of the product can cause physical injury and material damage.
• Keep these instructions in a safe place for future reference.
• This product was designed and produced strictly for the use indicated in this manual. Any other use, not expressly indicated here, could compromise the good condition/operationof the product and/or be a source of danger.
• **ELECTROCELOS S.A.** is not responsible for the improper use of the product, or other use than that for which it was designed.
• **ELECTROCELOS S.A.** is not responsible if safety standards were not taken into account when installing the equipment, or for any deformation that may occur to it.
• **ELECTROCELOS S.A.** is not responsible for the safety and proper operation when using components not sold by them.
• Do not make any modifications to the operator components and / or their accessories.
• Before installation unplug the automatism from the source of power.
• The installer must inform the client how to handle the product in case of emergency and provide this manual to the user.
• Keep remote controls away from children, to prevent the automated system from being activated involuntarily.
• The customer shall not, under any circumstances, attempt to repair or tune the automatism. Call qualified technician only.
• Connect the automatism to a 110V/230V plug with ground wire.
• Automatism for indoor use.

02. THE CONTROL BOARD

TECHNICAL SPECIFICATIONS

The **MC15BA** is a monophasic control board com a control system via incorporated rádio, developed for the automation of electromechanical barriers.
It is possible to integrate on the central, a radio system which operates as a safety device composed of a "Base" **RTX 2278** receiver-transmitter module (connected on the own central) which receives a maximum of two “Sensor” **RTX 2252** receiver-transmitter, powered by batteries, for the connection of mechanical safety bands and resistive 8K2 Ohm, usually installed in the aluminum rod.

	110V	230V
• **Power supply**	110V AC 50-60Hz	230V AC 50-60Hz
• **Lightbulb’s output**	110V AC 50Hz 500W máx.	230V AC 50Hz 500W máx.
• **RGB Lightbulb’s output**	24V DC 100mA máx.	
• **Motor’s output**	110V AC 50-60Hz 1000W máx.	230V AC 50-60Hz 1000W máx.
• **Auxiliary accessories output**	24V AC 6W máx.	
• **Security and BT transmitters**	24V DC	
• **Working temperature**	-10°C a + 55°C	
• **Incorporated Radio Receptor**	433,92 Mhz	
• **OP Transmitters**	12-18 bits or Rolling Code	
• **Maximum memory capacity**	120 (CODE or CODE PED)	
• **Control board Dimensions**	108x138 mm.	

• CONNECTOR’S DESCRIPTION

CN1	**01** • Grounding **02** • Grounding
CN2	**01** • 110V or 230V Line Input (phase) **02** • 110V or 230V Line Input (neutral) **03** • Lightbulb/magnetic lock’s output AC110V or AC230V 100W Max (neutral) **04** • Lightbulb/magnetic lock’s output AC110V or AC230V 100W Max (phase) **05** • 110V or 230V Motor’s Output – Opening **06** • 110V or 230V Motor’s Output – Common **07** • 110V or 230V Motor’s Output - Closing
CN3	**01** • Photocells power supply output (24V AC 6W) **02** • Photocells power supply output (GND) **03** • Step-by-Step transmitter button or opening button input (NO)

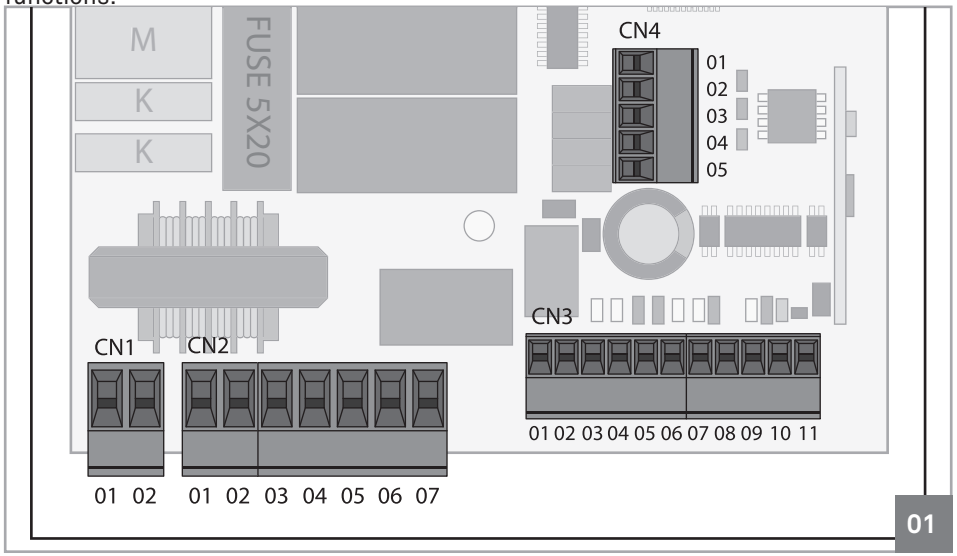
02. THE CONTROL BOARD

TECHNICAL SPECIFICATIONS

CN3	**04** • Locking device (NC) Closing push-button input (NO) **05** • Common GND output **06** • Safety device input (NC) **07** • Motor’s opening limit-switch input (NC) **08** • Common GND output **09** • Motor’s closing limit-switch input (NC) **10** • Antenna's common input **11** • Antenna's hot pole input
CN4	**01** • Auxiliar Power Supply +24V DC for lightbulb or RGB LED **02** • Output nº4 activated during (opening) 100mA maximum capacity **03** • Output nº3 activated during (closing) 100mA maximum capacity **04** • Output nº2 activated during (Pause time) 100mA maximum capacity **05** • Output nº1 activated during (closing barrier) 100mA maximum capacity

PROGRAMMING PRE-RECOMENDATIONS

Before proceeding to the control board configuration, pay special attencion to the following parameters in the table below in order to better understand the control board functions:



01

02. THE CONTROL BOARD

PROGRAMMING PRE-RECOMENDATIONS

CN2

Magnetic lock or lightbulb:
03 and e 04 • this output allows a magnetic lock or a lightbulb connetion. (see page 4B)

Capacitator:
05 and 07 • Connect the capacitor on the 05 and 07 outputs.

CN3

Step-by-step power button:
03 • This input allows you to change the operation according to the orders sent, using transmitters or buttons on low voltage.
When sending a first order, the barrier's opening is triggered until the motor's time ends or the opening limit-switch is detected.
A second order triggers the barrier's closure.
If you send an order during the opening or closing of the barrier, the movement stops and it is only restored (in the opposite direction to what it was before the stoping order) after sending a new order.

Locking device (STOP button):
04 • This input allows connection of a lock button (NC).
An order sent (switch to NO) during any barrier's movement causes an immediate stop and it remains stopped until it returns to it's normal state (switch to NC).
After returning to NC mode, the first maneuver will always open with 5 seconds of delay (after sending a transmitter order or from a push-button.
If do not use the 04 and 05 inputs, do a bridge (shunt) between them.

Operating with TIMER:
03 and 05 • The control board allows to connect a TIMER.
With this function, it is possible to program an exact time for the barrier to perform the opening /closing in automatic mode.

Safety circuits:
06 • This circuit allows the connection of all kinds of safety devices such as photocells, safety bands, etc.
This device intervenes only in the barrier's closure and, when it's triggered, the operator reverses the travelling direction.

02. THE CONTROL BOARD

PROGRAMMING PRE-RECOMENDATIONS

CN3

Limit-swiches:
07 and 09 • The center allows the connection of opening and closing limit-switches (both in NC).
The triggering of any limit-switches causes the movement to stop immediately.
The triggering the limit-switches will be signaled by the FCH and FAP LEDs.
When a limit switch is activated, its LED indicator turns off.
The FAP identifies the opening limit-switch and the FCH LED the closing limit.
If it is not using limit switches, connect the circuits 7and 9 with the 8 (CN3) with a shunt.

CN4

01 • Lightbulb or 24V DC LED auxiliar input

Open collector for the management of auxiliary functions:
02 • The output Out 4 is activated on intermittently mode, only in the opening phase.
03 • The output Out 3 is activated on intermittently mode, only in the closing phase.
04 • The output Out 2 is activated on fixed mode, only in the pause time.
05 • The output Out 1 is activated on fixed mode, only with the closed barrier.

• SETTING THE CONTROL BOARD - SEL / SET BUTTON

SEL button: Does the selection of the function to change. The selection is identified by the blinking LED corresponding to the selected function at that time. Pressing the SEL key repeatedly will scroll through the various programming functions. The selection will remain active for 10 seconds, and after that time the control unit returns to its original state (no active selection).
SET button: Makes the programming of the selected function by the SEL button.

⚠ **The SET button can be replaced by a command since the latter is programmed.**

• MOTORS STRENGTH AND SPEED

The control board has a VR1 trimmer for regulating the motors force and speed, controlled by the microprocessor. The regulation can be made between 50% and 100% strength.
In each movement startup, the central applies full power for 2 seconds, even when it is made the force regulation for avalue than the maximum.

⚠ **Whenever the VR1 trimmer is adjusted, the control board has to redo the learning process, because the maneuver and deceleration times may vary.**

03. CONFIGURATION

PROGRAMMING PRE-RECOMENDATIONS

• OBSTACLES DETECTION

The control board has a VR2 trimmer, controlled by microprocessor, for regulating the opposition force required for the detection of obstacles.
The adjustment can be performed with a intervention time between 0.1 seconds and 3 seconds.

NOTA: Setting the VR2 trimmer to its minimum, disables the obstacles detection functionality.

⚠
- In the presence of limit-switch devices connected to the control board, the detetion of obstacles causes the complete inversion of the movement during the closure and the inversion for only 2 seconds during the opening course.
- When there are limit-switch devices connected to the control board, the detetion of obstacles causes always the inversion of the movement during the closure except in last 5 seconds of the maneuver for which it performs the stop.
During the opening, it inverts the movement by only 2 seconds, except in the last 5 seconds of maneuver (stoping the motors).

MAIN MENU

MAIN MENU		
LED	**LED OFF**	**LED ON**
• CODE	No code	Inserted code
• CODE PED.	Not used	
• IN.CMD.AP	Disabled	Enabled
• L. CORT.	Lightbulb	Magnetic lock
• PGM. AUT.	Automatic PGM=OFF	Automatic PGM=ON
• T. MOT	Not used	
• T. MOT. PED	Not used	
• T. PAUSA	Without automatic closure	With automatic closure

03. CONFIGURATION

MAIN MENU

• CODE | PROGRAMMING TRANSMITTERS

The control board only accepts Dip-Switch transmitters or MOTORLINE Rolling Code transmitters, and it has a maximum capacity of 120 transmitters. When trying to program the 121º transmitter, all the programming LEDs will flash simultaneously (memory is full)

To program new commands:
01. Press **SEL** button once, the **CODE LED** will begin to flash.
02. Press once the transmitter button you want to program, during 1sec.
03. The **LED CODE** remains lit permanently, indicating the programming success.

To delete all configured transmitters:
01. Press **SEL** button once, the **CODE LED** will begin to flash.
02. Press the **SET** button once! The **CODE LED** will turn off and all controls will be deleted.

• INB. CMD. AP | TRANSMITTER INHIBITION DURING THE OPENING AND PAUSE TIME

With the function ativated, the control board rejects all the transmitter signals during the opening maneuvers and automatic pause time. Its important that this function is ativated during a magnetic coil instalation, because the control board will ignore the crossings performed during the opening course and the pause time.
The control board is supplied by the manufacturer with this funcion active.

Activate (LED ON) / deactivate (LED OFF) function:
01. Press **SEL** button once, the **CODE LED** will begin to flash. Press the **SEL** button the times necessary until the **INB CMD AP LED** starts to flash.
02. Press **SET** button once to enable / disable the function. The **INB CMD AP LED ON** indicates that the function is active and the **LED OFF** indicates that the function is deativated.

• L. CORT | LIGHBULB AND MAGNETIC LOCK SELECTION

The control board has a 110V or 230V AC output for a lightbulb or a magnetic lock conection (applied in the rod tip).
The control board is supplied by the manufacturer with this funcion active (LED ON).

To change the operating mode, follow these steps:
01. Press **SEL** button once, the **CODE LED** will begin to flash. Press the **SEL** button the times necessary until the **LED L. CORT** starts to flash.

MAIN MENU

02. Press **SET** button once to change the operating mode.
The **L.CORT LED** will turn on/ turn off e a configuration is complete.

Door Lock Mode (LED ON): with the barrier closed, the control board continuously feed the magnetic lock until 1 second before iniciate any opening operation.
The output is fed back 1 second before it closes completely, so that once the maneuver ends, the rod remains attached to the lock.

Lightbulb Mode (LED OFF): the control board provides power to the lightbulb during the closing and opening phase, turning it off when the barrier is open or closed.

• PGM. AUT. | AUTOMATIC COURSE SCHEDULE

With the limit switches already set, the control board allows a automatic programming of the working course (recommended).
01. Unlock the barrier, put the rod halfway, and lock the barrier.
02. Press **SEL** button once, the **CODE LED** will begin to flash. Press the **SEL** button the times necessary until the **LED PGM AUT** starts to flash.
03. Press the **SET** button and hold and the rod have to start closing!

> ⚠ If the rod begins to open, release the SET button, invert the cables of the connectors 5 and 7 of the CN2 and 07 and 09 of the CN3, and start this program from the beginning.

04. Let the rod close, open and re-close without releasing the **SET button**!
05. By closing the second time, the **LED AUTO PGM** will remain lit and the **T. PAUSE LED** will begin to flash. Release the **SET** button and wait 10 seconds until the **T. PAUSE LED** stops flashing.

The control board automatically sets a deceleration time during the opening and the closure equal to 15% of the full course.

• T. PAUSA | PAUSE TIME PROGRAMMING FOR AUTOMATIC CLOSURE (4MIN MAX)

The control board is supplied by the manufacturer with automatic closure active after 10sec.

Disable the automatic closure:
01. Press **SEL** button once, the **CODE LED** will begin to flash. Press the **SEL** button the times necessary until the **LED T. PAUSA** starts to flash.
02. Press the **SET** button twice in 2sec! The **T.PAUSA LED** turns off and the function is disabled.

03. CONFIGURATION

EXTENDED MENU 1

Activate or change the pause time for automatic closure:
01. Press **SEL** button once, the **CODE LED** will begin to flash. Press the **SEL** button the times necessary until the **LED T. PAUSA** starts to flash.
02. Press once the **SET** button, wait the desired time for the pause time and press again the **SET** button (the expected time is defined as the pause time).
The **T.PAUSA LED** remains lit and the pause time is active.

• ACCESS TO EXTENDED MENU 1

To access the Extended Menu 1 options follow these instructions:
01. Press and hold the **SET** button for 5 seconds, the **LEDs T.MOT.PED** and **T.PAUSA** will flash alternately.
02. The control board provides 30 seconds to select functions form the extended menu 1 (using the **SEL** and **SET** buttons), and after this time it returns to the main menu.

EXTENDED MENU 1		
LED	**LED OFF**	**LED ON**
• CODE	Step by step	Inverter
• CODE PED.	Lightbulb	Pré-lightbulb
• IN.CMD.AP	Not used	
• L. CORT.	Not used	
• PGM. AUT.	Follow Me = OFF	Follow Me = ON
• T. MOT.	Not used	
• T. MOT. PED	Switched Flashing Light ON/OFF	
• T. PAUSA	Switched Flashing Light ON/OFF	

• CODE | STEP BY STEP / AUTOMATIC OPERATION

Operation in Automatic Mode (CODE LED ON):
• The first impulse from the transmitter/ push button triggers the barrier's opening during the defined working time.
• The second impulse triggers the barrier closure.
• If you press the transmitter / push-button during opening or closing maneuvers, the

EXTENDED MENU 1

barrier will reverse the direction of operation until reaching the limit-switch.

Operation in Step-by-Step Mode (CODE LED OFF):
For every order sent by the transmitter / push button, the control board will behavior in this way: open-stop-close-stop-open(...). The control board is supplied by the manufacturer with the step-by-step operation mode active.

To change the operating mode, follow these instructions:
01. Activate the extended menu 1 (see ACCESSING EXTENDED MENU 1 on page 5B).
02. Press **SEL** button once, the **CODE LED** will begin to flash.
03. Press the **SET** button once to change programming.
The **CODE LED** will turn on / turn off permanently, signaling the success of operating mode alteration.

• CODE PED. | PRE-LIGHTBULB

With this function active, the control board triggers the flashing lightbulb output (CN4 4 and 5 connectors) 3 seconds before starting any opening or closing maneuver. The control board is supplied by the manufacturer with the step-by-step operation mode disabled.

Activate (LED ON) / deactivate (LED OFF) function:
01. Activate the extended menu 1 (see ACCESSING EXTENDED MENU 1 on page 5B).
02. Press **SEL** button once, the **CODE LED** will begin to flash. Press the **SEL** button the times necessary until the **LED CODE PED** starts to flash.
03. Press **SET** button once to enable/disable the function. The **CODE PED LED** ON indicates that the function is active and the **LED OFF** indicates that the function is deativated.

• PGM. AUT. | FOLLOW ME

With the pause time programmed, it is possible to trigger the “Follow Me” option.
With this option enabled, whenever the photocells detect a some user/object passing between them, the control board triggers the closing maneuver 5 seconds after the detection.

Activate (LED ON)/deactivate (LED OFF) function:
01. Activate the extended menu 1 (see ACCESSING EXTENDED MENU 1 on page 5B).
02. Press **SEL** button once, the **CODE LED** will begin to flash. Press the **SEL** button the times necessary until the **PGM AUT PED** starts to flash.
03. Press **SET** button once to enable / disable the function.
The **PGM AUTO** LED ON indicates that the function is active and the LED OFF indicates that the function is deativated.

EXTENDED MENU 2

• ACCESSING THE EXTENDED MENU 2

To access the options from Extended Menu 2, read the following instructions:
01. Activate the extended menu 1 (see ACCESSING EXTENDED MENU 1 on page 5B).
02. While **T.MOT.PED** and **T.PAUSA** LEDs blink alternately, return to continuously press the **SET** button for 5 seconds until they blink simultaneously.
03. The control board provides 30 seconds to select functions form the extended menu 2 (using the **SEL** and **SET** buttons), and after this time it returns to the main menu.

EXTENDED MENU 2		
LED	**LED OFF**	**LED ON**
• **CODE**	Programming Distance = OFF	Programming Distance = ON
• **CODE PED.**	Photocells test = OFF	Photocells test = ON
• **IN.CMD.AP**	Not used	
• **L. CORT.**	Not used	
• **PGM. AUT.**	Not used	
• **T. MOT.**	PUL=Open / Close | BL = STOP	PUL=Open | BL = Close
• **T. MOT. PED**	Flashing simultaneously ON/OFF	
• **T. PAUSA**	Flashing simultaneously ON/OFF	

• CODE | DISTANCE TRANSMITTER PROGRAMMING

Activating the distance transmitter programming function:
01. Activate the extended menu 2 (see ACCESSING EXTENDED MENU 2 on page 6B).
02. Press **SEL** button once, the **CODE LED** will begin to flash.
03. Press for 1 second the **SET** button and the **CODE LED** will light up permanently, indicating the programming’s success.

Repeat the operation to restore the previous configuration.

To program a transmitter at distance, read the following instructions:
01. Press the a button from a configured transmitter for longer than 10 seconds without releasing. The CODE LED will start to flash indicating that the control board is in programming mode.
02. Press for 1 second the new transmitter button you want to program.

03. CONFIGURATION

MENU EXTENSO 2

• CODE PED | PHOTOCELLS TEST

This test is performed before starting any operation. If it doesn't detect security devices connected in the CN3 06 output, the control board will reject opening/closing orders.

To enable the photocell test programming, read the following instructions:
01. Activate the extended menu 2 (see ACCESSING EXTENDED MENU 2 on page 6B).
02. Press **SEL** button and the **CODE PED LED** will begin to flash.
03. Press the **SET** button and the **CODE PED LED** will light up permanently, indicating the programming's success.
Repeat the operation to restore the previous configuration.

• T. MOT. | PUL = OPEN | BL = CLOSE FUNCTION

Change the operating mode of the PUL and BL inputs:
01. Activate the extended menu 2 (see ACCESSING EXTENDED MENU 2 on page 6B).
02. Press **SEL** button and the **T. MOT LED** will begin to flash.
03. Press the **SET** button and the **T. MOT LED** will light up permanently, indicating the programming's success.
Repeat the operation to restore the previous configuration.

Therefore, the PUL (CN3 → 3) input allows the connection of a push button (NO) to control only the opening and the BL (CN3 → 4) input allows the connection of a push button (NO) to control only the closure.

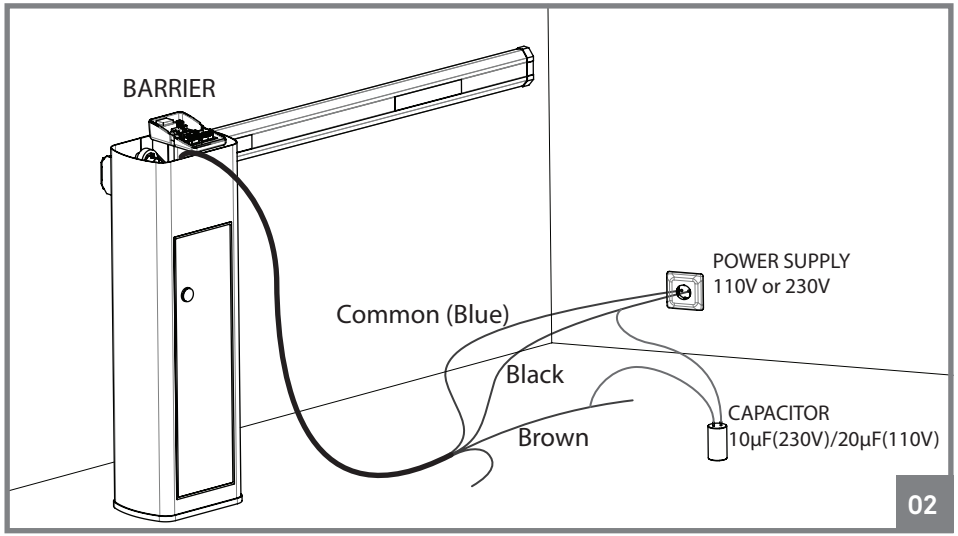
RESET: If you need to restore the control board to the factory settings, press the **SEL** and **SET** keys simultaneously. At this time, all LEDs will light up simultaneously and then will turn off, indicating the reset's sucess.

04. COMPONENTS TEST

SCHEME FOR CAPACITATOR

To detect which components have problems in an electromechanical barrier installation, sometimes is necessary to conduct tests with a direct connection to a 110V or 230V power supply. For it is necessary to connect capacitor between the automation and the power supply in order to test.
In the scheme below it is shown how this connection should be done and how the different component wires should be connected.

NOTES:
• To perform the test it is not needed to remove the automatism from the instalation, because in this way it's easier to understand if the automatism connected directly to the power supply can function correctly;
• The linking order between the capacitator and the automatism wires is not important, as long as it is connected, one with the brown wire and the other with the black wire;
• The common wire must always be connected to the power supply.
• To reverse the automatism operating direction just swap the automatism black wire with brown wire in the power supply direct's connection.



This test only applies to a 110V or 230V barrier. To test a 24V barrier, simply connect the motor wires to a 24V battery.

04. COMPONENTS TEST

PHOTOCELLS TEST AND TRANSMITTERS

• PHOTOCELLS TEST

The control board is prepared to a safety device connection in accordance with the section 5.1.1.6 of standard EN 12453.
In every maneuver is performed a test for the Security Device and the Lock.
In case of a funtion/connection failure the motor doesn't start and every LED's remain in a intermittent mode, indicating the error. When the photocells operation is corrected, the control board returns to it's normal functioning. This action by the control board allows to recognize failures in accordance with is mentioned in category 2 of EN 954-1.

• TRANSMITTER TEST

In the position corresponding to each transmitter input in low voltage, the control board has a LED to identify the condition of it. The LED on indicates that the input is closed, while the LED off indicates that the input is open.

05. TROUBLESHOOTING

FINAL CONSUMERS INSTRUCTIONS

SPECIALIZED TECHNICIANS INSTRUCTIONS

Problem	Procedure	Behavior	Procedure II	Discovering the origin of the problem			
• Barrier doesn't work.	• Make sure you have power in the automation control board and if it is working properly.	• Still not working.	• Consult a qualified MOTORLINE technician.	1 • Open control box and check if it has 230V/110V/24V power supply; 2 • Check input fuses;	3 • Disconnect barrier from control board and test them by connecting directly to power supply in order to find out if they have problems (see page 11.A).	4 • If the barrier works, the problem is on the control board. Pull it out and send it to our MOTORLINE technical services for diagnosis;	5 • If the barrier doesn't work, remove them from installation site and send to our MOTORLINE technical services for diagnosis.
• Barrier doesn't move but makes noise.	• Unlock barrier and move boom by hand to check for mechanical problems on the movement.	• Encountered problems?	• Consult a qualified MOTORLINE technician.	1 • Check all motion axis and associated motion systems related with the barrier to find out what is the problem.			
		• Boom moves easily?	• Consult a qualified MOTORLINE technician.	1 • Check capacitors, testing operator with new capacitor; 2 • If capacitors are not the problem, disconnect motor from	control board and it them by connecting directly to power supply in order to find out if it has problems (see page 11.A).	3 • If the motor works, the problem is from control board. Pull it out and send it to our MOTORLINE technical services for diagnosis;	4 • If the motor doesn't work, remove them from installation site and send to our MOTORLINE technical services for diagnosis.
• Barrier opens but doesn't close.	• Unlock motor and move boom by hand to closed position. Lock motor again and turn off power supply for 5 seconds. Reconnect it and send order to open barrier using transmitter.	• 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, push button, video intercom, etc.) of the barrier are jammed and sending permanent signal to control unit; 3 • Consult a qualified MOTORLINE technician.	All MOTORLINE control boards have LEDs that easily allow to conclude which devices are with anomalies. All safety devices LEDs (DS) 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), etc. If "START" circuits LEDs are turn On, there is a control device sending permanent signal.	**A) SECURITY SYSTEMS:** 1 • Close with a shunt all safety systems on the control board (check manual of the control board in question). 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 motor 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 from START terminal input (terminal 3 of CN3 connector). 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 to our technical services for diagnosis.
• Barrier doesn't make complete route.	• Unlock barrier and move boom by hand to check for mechanical problems on the barrier.	• Encountered problems?	• Consult a qualified MOTORLINE technician.	1 • Check all motion axis and associated motion systems related with the barrier to find out what is the problem.			
		• Boom moves easily?	• Consult a qualified MOTORLINE technician.	1 • Check capacitors, testing with new capacitors; 2 • If capacitors are not the problem, disconnect motor from control board and test it by connecting directly to power supply in order to find out if it is broken; 3 • If the motor doesn't work, remove it from installation site and send to our MOTORLINE technical services for diagnosis.	4 • If motor work well and move barrier at full force during the entire course, the problem is from controller. Set force using trimmer on the board. Make a new working time programming , giving suffient time for opening and closing with appropriate force (page 08.B of this manual for MBM6 230V). 5 • If this doesn't work, remove control unit and send it to	MOTORLINE technical services services.	**NOTE:** Setting force of the controller 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.).

06. CONNECTION SCHEME

COMPONENT CONNECTION TO THE CONTROL BOARD