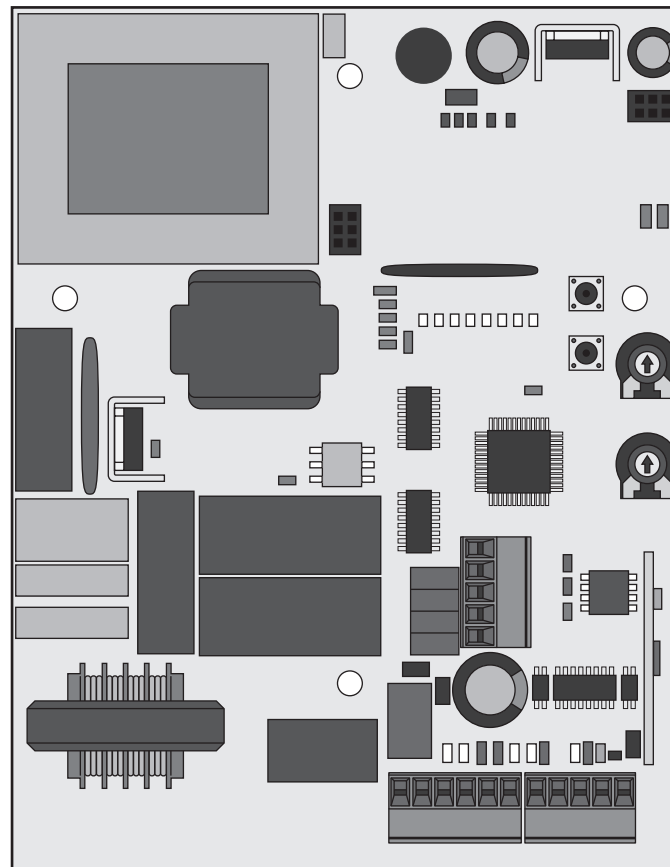




# MC15SC

## USER / INSTALLER MANUAL



# 00. CONTENT

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# 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/operation of 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 **MC15SC** is a monophasic control board com a control system via incorporated rádio, developed for the automation of sliding gates.

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.

	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	110VAC 50-60Hz 1000 W máx.	230VAC 50-60Hz 1000 W máx.
• Auxiliary accessories output	24VAC 6 W 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)

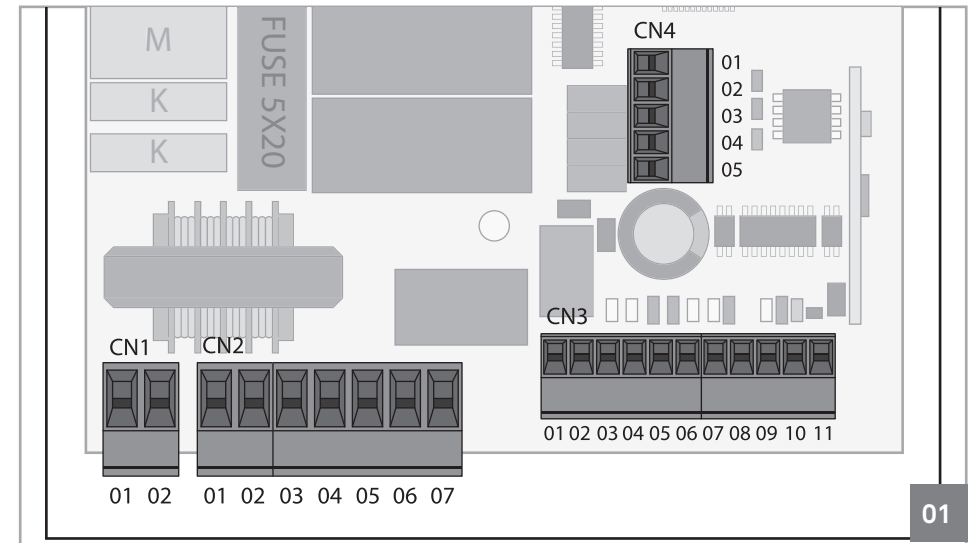
## 02. THE CONTROL BOARD

### 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 n°4 activated during (opening) 100mA maximum capacity 03 • Output n°3 activated during (closing) 100mA maximum capacity 04 • Output n°2 activated during (Pause time) 100mA maximum capacity 05 • Output n°1 activated during (closing gate) 100mA maximum capacity

### PROGRAMMING PRE-RECOMENDATIONS

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



## 02. THE CONTROL BOARD

### PROGRAMMING PRE-RECOMENDATIONS

CN2	<p><b>Courtesy light or flashing light:</b> <b>03 e 04</b> • This output allows the connection of a courtesy light or a flashing light (see page 4B), (this output does not blink).</p> <p><b>Capacitor:</b> <b>05 and 07</b> • Connect the capacitor on the 05 and 07 outputs.</p>
CN3	<p><b>Step-by-step power button:</b> <b>03 and 05</b> • This input allows you to change the operation according to the orderssent, using transmitters or buttons on low voltage. When sending a first order, the gate's opening is triggered until the motor's time ends or the opening limit-switch is detected. A second order triggers the gate's closure. If you send an order during the opening or closing of the gate, 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.</p> <p><b>Locking device (STOP button):</b> <b>04 and 05</b> • This input allows connection of a lock button (NC). An order sent (switch to NA) during any gate'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.</p> <p><b>Operating with TIMER:</b> <b>03 and 05</b> • The control board allows to connect a TIMER. With this function, it is possible to program an exact time for the gate to perform the opening /closing in automatic mode.</p> <p><b>Safety circuits:</b> <b>06</b> • This circuit allows the connection of all kinds of safety devices such as photocells, safety bands, etc. This device intervenes only in the gate's closure and, when it's triggered, the operator reverses the travelling direction.</p>

## 02. THE CONTROL BOARD

### PROGRAMMING PRE-RECOMENDATIONS

CN3	<p><b>Limit-swiches:</b> <b>07 and 09</b> • 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 7 with 8 and 9 with 8 of CN3 conector with a shunt.</p>
CN4	<p><b>01</b> • Lightbulb or 24V DC LED auxiliar input</p> <p><b>Open collector for the management of auxiliary functions:</b> <b>02</b> • The output Out 4 is activated on intermittenly mode, only in the opening phase. <b>03</b> • The output Out 3 is activated on intermittenly mode, only in the closing phase. <b>04</b> • The output Out 2 is activated on fixed mode, only in the pause time. <b>05</b> • The output Out 1 is activated on fixed mode, only with the closed gate.</p>

#### • 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.



SEL



SET



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.



FORZA



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 detection 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 detection 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 (stopping the motors).

### MAIN MENU

MAIN MENU		
LED	LED OFF	LED ON
• CODE	No code	Inserted code
• CODE PED.	No code	Inserted code
• IN.CMD.AP	Disabled	Enabled
• L. CORT.	Lightbulb	Courtesy light
• PGM. AUT.	Automatic PGM=OFF	Automatic PGM=ON
• T. MOT.	Motor time 30 sec.	Programmed time
• T. MOT. PED	Motor time Ped. 10 sec.	Programmed time
• 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 121° 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.

#### • CODE PED | PEDESTRIAN OPERATION

The control board allows to program the passage of people without the gate making the complete opening. With this function, when pressing the remote's button, the gate will open only the necessary for the passage of one person.

#### Programming transmitters for pedestrian mode (CODE PED LED ON) / erase transmitters (LED CODE OFF):

01. Press **SEL** button the times necessary until the **LED CODE PED** starts to flash.
  02. Press the transmitter button desired for 1 second.
- If you are deleting transmitters, press **SET** button for 1 second.
03. **CODE PED LED** lighted, signals that the transmitter is programmed and **LED OFF** signals that the transmitters have been deleted.

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

With the function activated, the control board rejects all the transmitter signals during the opening maneuvers and automatic pause time. Its important that this function is activated during a magnetic coil installation, 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 function 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.

## 03. CONFIGURATION

### MAIN MENU

**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 deactivated.

#### • **L. CORT** | LIGHTBULB AND COURTESY LIGHT SELECTION

The control board has a 110V or 230V AC output for a lightbulb or a courtesy light. The control board is supplied by the manufacturer with this function active (LED OFF).

**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.

**02.** Press **SET** button once to change the operating mode.

The **L.CORT LED** will turn on/ turn off e a configuration is complete.

**COURTESY LIGHT mode (LED ON):** The central board is able to command a courtesy light for 3 minutes. Each time you command the automatism, this output will remain active for 3 minutes. To activate, press **SEL** to LAMP/CORT flash alternately. Press again **SEL** and the LAMP/CORT will blink quickly. Press **SET** for 1 seconde, causing the LED lighting.

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

**OFF** - Lightbulb opening/pause/closure

**ON** - Lightbulb opening/closure

#### • **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 gate, put the rod halfway, and lock the gate.

**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!

## 03. CONFIGURATION

### MAIN MENU

**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.MOT AND DECELERATION** | MOTOR TIME AND DECELERATION PROGRAMMING (MANUAL)

With this function, can trigger deceleration, decreasing the gate's movement velocity.

**NOTE** • To perform this programming is necessary that the motors have limit-switch. Instead of using the **SET** button on the central board, you can use a transmitter that is already programmed.

The central board is supplied by the manufacturer with a working time set at 30 seconds without deceleration.

**Programming motor working time with deceleration (GATE CLOSED):**

**01.** Press **SEL** button the times necessary until the **LED T. MOT.** starts to flash.

**02.** Press **SET** button for 1 seconde, to motor start's the opening. **If the motor don't start de opening, invert wires connection 5 and 7, on CN2 connector (see page 2B).**

**03.** Press **SET** button for 1 seconde, when the gate is at the desired deceleration point .

**04.** Press **SET** again, when you want to establish the opening limite-switch. At this time, **T. MOT. LED** will flash quickly indicating that programming for the closing can be performed automatically and the motor starts the closing move. Repeat the process to set the closure.

**Programming motor working time without deceleration (GATE CLOSED):**

**01.** Press **SEL** button the times necessary until the **LED T. MOT.** starts to flash.

**02.** Press **SET** button for 1 seconde, to motor start's the opening. **If the motor don't start de opening, invert wires connection 5 and 7, on CN2 connector (see page 2B).**

**03.** Press **SET** twice when you want to establish the opening limite-switch. At this time, **T. MOT. LED** will flash quickly indicating that programming for the closing can be performed automatically and the motor starts the closing move.

**04.** Press **SET** twice when you want to establish the limite-switch.

**05.** **T. MOT. LED** will light, signaling that the working time is programmed.

## 03. CONFIGURATION

### MAIN MENU

#### • T. MOT. PED | PEDESTRIAN WORKING TIME PROGRAMMING

To activate the pedestrian function, the control board allows a small opening programming.

**NOTE** • To perform this programming is necessary that the engine has limit.

Instead of using the **SET** button on the receiver, you can use a command that is already scheduled.

The unit is supplied by the manufacturer with a pedestrian working time set at 10 seconds without slowdown.

#### Programming the pedestrian working time with deceleration (Gate closed):

01. Press **SEL** button the times necessary until the **LED T. MOT.PED.** starts to flash.
02. Press **SET** button for 1 second, to motor starts the opening. If the motor doesn't start the opening, invert wires connection 5 and 7, on CN2 connector (see page 2B).
03. Press **SET** button for 1 second, when the gate is at the desired deceleration point.
04. Press **SET** again, when you want to establish the opening limit-switch. At this time, **T. MOT. LED** will flash quickly and the motor 1 will start the closure maneuver.
05. Press the **SET** button when the gate is at the desired position to start the deceleration.
06. Press **SET** again when you want to establish the closing limit-switch.
07. The **T.MOT. PED LED** will remain lighted signaling that the working time is programmed.

#### Programming the pedestrian working time without deceleration (Gate closed):

01. Press **SEL** button the times necessary until the **LED T. MOT.PED** starts to flash.
02. Press **SET** button for 1 second, to motor starts the opening. If the motor doesn't start the opening, invert wires connection 5 and 7, on CN2 connector (see page 2B).
03. Press **SET** twice when you want to establish the opening limit-switch. At this time, **T. MOT. LED** will flash quickly indicating that programming for the closing can be performed automatically and the motor starts the closing move.
04. Press **SET** twice when you want to establish the closing limit-switch.
05. The **T.MOT. PED LED** will remain lighted signaling that the working time is programmed.

## 03. CONFIGURATION

### MAIN MENU

#### • 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.

#### 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.

## 03. CONFIGURATION

### EXTENDED MENU 1

#### • 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 **LED's T.MOT.PED** and **T.PAUSA** will flash alternately.

**02.** The control board provides 30 seconds to select functions from 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
• <b>CODE</b>	Step by step	Inverter
• <b>CODE PED.</b>	Electric Brake = OFF	Electric Brake = ON
• <b>IN.CMD.AP</b>	Present man = OFF	Pres. APCH or CH = ON
• <b>L. CORT.</b>	Deceleration = OFF	deceleration = ON
• <b>PGM. AUT.</b>	Follow Me = OFF	Follow Me = ON
• <b>T. MOT.</b>	Encoder = OFF	Encoder = ON
• <b>T. MOT. PED</b>	Switched Flashing Light ON/OFF	
• <b>T. PAUSA</b>	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 gate's opening during the defined working time.
- The second impulse triggers the gate closure.
- If you press the transmitter/push-button during opening or closing maneuvers, the gate 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).

**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.

## 03. CONFIGURATION

### EXTENDED MENU 1

#### • **CODE PED.** | ELECTRIC BRAKE

With this function active, when the control board finish the maneuver, when it reaches the end of course, does a brief inversion of output motor, to stop immediately the motor (eg. Gates with inclination).

**Activate (LED ON) / deactivate (LED OFF) function:**

**01.** Activate the extended menu 1 (see ACCESSING EXTENDED MENU 1 on page 7A).

**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 deactivated.

#### • **INB. CMD. AP** | PRESENT MAN OPERATION

With this function active, the control board only gives order to the motor while pressing the control button from a transmitter or a start button. If the pressing stops, the gate's movement stops immediately.

**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 deactivated.

#### • **L. CORT** | DECELERATION

When this function is disabled find it is no longer possible to define a slowdown in motor time schedule.

In automatic programming will also not exist slowdown.

When making the programming of this function you will have to program the motor or time or do the automatic programming, so that changes made remain in operation.

The control board is supplied by the manufacturer with the operation mode activated.

**To change the operating mode, follow these steps:**

**01.** Turn on the extensive menu 1 (see ACCESSING EXTENDED MENU 1 on page 7A).

**02.** Press **SEL** button once, the **CODE LED** will begin to flash. Press the **SEL** button the times necessary until the **L. CORT LED** starts to flash.

**03.** Press once the **SET** key to change the operating mode.

The **L.CORT. LED** will turn **ON/OFF** and the setup is complete.



## 03. CONFIGURATION

### EXTENDED MENU 1

#### • 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 7A).
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 deactivated.

#### • T. MOT | ENCODER (FUTURE USE)

## 03. CONFIGURATION

### EXTENDED MENU 2

#### • ACCESSING THE EXTENDED MENU 2

To access the Extended Menu 2 options follow these instructions:

01. Activate the extended menu 1 (see ACCESSING EXTENDED MENU 1 on page 7A).
02. While **T.MOT.PED** and **T.PAUSA** LED's 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 from 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	CS1 = Closing Inversion	CS1 = 1s inversion in Open/Close
• L. CORT.	CS2 = STOP in Open/Close	CS2 = 1s inversion in Open/Close
• PGM. AUT.	PUL=Open/Close   BL=STOP	PUL=Open/Close   BL=Pedestrian or DS2
• 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).
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

### EXTENDED MENU 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 8B).
  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.

#### • IN.CMD.AP. | SENSOR OPERATION 1 (RTX 2252)

With sensor 1 (RTX 2278) connected to the control board, the action will perform as follows:

LED STATUS	OPENING	CLOSING
ON	Stops and Inverts the maneuver for 1 second	Stops and Inverts the maneuver for 1 second
OFF	It does nothing	Stops and Inverts completely

Changing the mode of operation:

01. Turn on the extensive menu 2 (see ACCESSING EXTENDED MENU 2 on page 8B).
02. Press **SEL** and the **IN.CMD.AP LED** will intermittently flash
03. Press the **SET** button and the **IN.CMD.AP LED** will turn on or off permanently, signaling the success of the programming.

#### • L. CORT | SENSOR OPERATION 2 (RTX 2252)

With sensor 2 (RTX 2252) connected to the control board, the action will perform as follows:

LED STATUS	OPENING	CLOSING
ON	Stops and Inverts the maneuver for 1 second	Stops and Inverts the maneuver for 1 second
OFF	Maneuver Stops	Maneuver Stops

Changing the operation mode:

01. Turn on the extensive menu 2 (see ACCESSING EXTENDED MENU 2 on page 8B).
02. Press **SEL** and the **L. CORT LED** will intermittently flash
03. Press the **SET** button and the **L. CORT LED** will turn on or off permanently, signaling the success of the programming.

## 03. CONFIGURATION

### EXTENDED MENU 2

#### • PGM. AUT. | OPERATION PUL = STEP BY STEP / BL = PEDESTRIAN OR DS2

Change the mode of operation of BL input (pedestrian):

01. Turn on the extensive menu 2 (see ACCESSING EXTENDED MENU 2 on page 8B).
  02. Press **SEL** and the **PGM. AUT LED** will flash.
  03. Press the **SET** button and the **PGM. AUT LED** will turn on permanently, signaling the success of the programming.
- Repeat the operation to restore the previous configuration.

This way the PUL input (CN3 → 3) enables the connection of a push button (NO) with step-by-step function and BL input (CN3 → 4) enables the connection of a push button (NO) exclusive to pedestrian.

Change the mode of operation of BL input (security device 2):

01. Turn on the extensive menu 2 (see ACCESSING EXTENDED MENU 2 on page 8B).
  02. Press **SEL** and the **PGM. AUT LED** will flash intermittently
  03. Press the **SET** key twice, **LED PGM. AUT** will flash quickly, signaling the changes success.
- Repeat the operation to restore the previous configuration.

This way the PUL input (CN3 → 3) enables the connection of a push button (NO) with step-by-step function and BL input (CN3 → 4) enables the connection of an additional set of photocells. At the opening, the photocells cause the immediate stop and a small inversion. In the closure, it does not occur any action.

#### • T. MOT. | OPERATION PUL = OPEN / BL = CLOSE

Change the operating mode of the PUL and BL inputs:

01. Turn on the extensive menu 2 (see ACCESSING EXTENDED MENU 2 on page 8B).
  02. Press **SEL** and the **T. MOT. LED** will flash intermittently
  03. Press the **SET** key, **LED PGM. AUT** will turn ON permanently, signaling the change's success.
- Repeat the operation to restore the previous configuration.

This way the PUL input (CN3 → 3) enables the connection of a push button (NO) just to control the opening and BL input (CN3 → 4) enables the connection of a push button (NO) to control only the closure.



If you need to restore the control board to the factory settings, press the **SET** and **SET** keys simultaneously. At that moment, all LEDs will light up simultaneously and then go off, completing the operation.

## 03. CONFIGURATION

### EXTENDED MENU 3

#### • ACCESS TO EXTENDED MENU 3

With the extended menu 3 it is possible to program the power / speed of the motor's slowdown.

To access the extended menu 3 options follow these instructions:

01. Access the extended menu 1 (see page 7A).
02. Access the extended menu 2 (see page 8B).
03. Continuously press the **SET** button for 5 seconds and the **T.PAUSA LED** and **T. RIT. ANTE LED** will flash alternately for a while, and blink at the same time right after.
04. There are available 30 seconds to select functions from the extended menu 3 (using the **SEL** and **SET** button), and after that time the control board returns to the main menu.

EXTENDED MENU 3	
STRENGTH LEVEL	LED'S ON
1	CODE
2	CODE • CODE PED
3	CODE • CODE PED • IN. CMD. AP.
4	CODE • CODE PED • IN. CMD. AP. • L. CORT
5	CODE • CODE PED • IN. CMD. AP. • L. CORT • PGM. AUT
6	CODE • CODE PED • IN. CMD. AP. • L. CORT • PGM. AUT • T. MOT

#### Motor strength programming during the slowdown:

It is possible to choose up to six different levels, in relation to the strength that the engine performs during the slowdown. The levels are represented by combinations of the LED indicated in the table above.

Scroll through the LEDs with the **SEL** key to set the desired strength, knowing that the **AUT / PP. LED ON** corresponds to the minimum strength, while the **AUT / PP., CODE, CODE PED, INB. CMD. AP, T. MOT., T. MOT. PED LEDs ON** correspond to the maximum strength.

The control board is supplied by the manufacturer with the strength set at level 3 (**AUT / PP., CODE, CODE PED ON**).

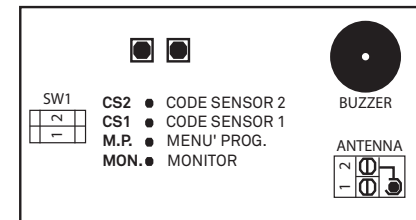
## 03. CONFIGURATION

### RTX 2278-BASE MODULE (OPTIONAL)

The RTX 2278-Base module is only used when applying a security bandat the gate or pillars.

#### • TECHNICAL SPECIFICATIONS

• Power	5V DC
• Maximum consumption	25 mA
• Operating frequency	Banda 868 MHz FSK
• RTX 2252 storable sensors	2
• Operating temperature	-10°C a 55°C
• Dimensions	59x39mm



- CN1**
- 01 • Hot Pole Antenna Input
  - 02 • Antenna Mass Entry

#### • OPERATION

The RTX 2278 device (Base) controls through radio frequency up to two RTX 2252 devices (sensor) for security bands connection.

This device has two different menus – **MONITOR** and **PROGRAMMING**.

The **MONITOR** menu is the stand-by mode of the device and is only for information display. It has the following indications:

MONITOR MENU			
LED	LED OFF	LED ON*	Flashing LED**
• CODE SENSOR 1	No alarm	Alarm SENSOR 1	Battery or communication Low
	Battery/communication OK		
• CODE SENSOR 2	Nenhum Alarme	Alarm SENSOR 2	Battery or communication Low
	Battery/communication OK		

\* Also issued a brief sound signal

\*\* Every minute are issued 2 short beeps sound signaling

## 03. CONFIGURATION

### RTX 2278-BASE MODULE (OPTIONAL)

The **PROGRAMMING** menu used to view the sensor programming state.

**Accessing the programming menu:**

01. Press the **SET** button to light the **M.P LED**.
02. Press the **SET** button to show the MENU PROGRAMMING indications.

PROGRAMMING MENU		
LED	LED OFF	LED ON
• CODE SENSOR 1	No programmed code	Programmed code
• CODE SENSOR 2	No programmed code	Programmed code

**NOTE:** If the **SEL** and **SET** keys are one minute without being pressed, the MENU MONITOR is triggered automatically.

#### • CODE SENSOR 1 E 2 | DESIRED CHANNEL SELECTION AND PROGRAMMING

This module has two channels for RTX 2252 sensors memorization.

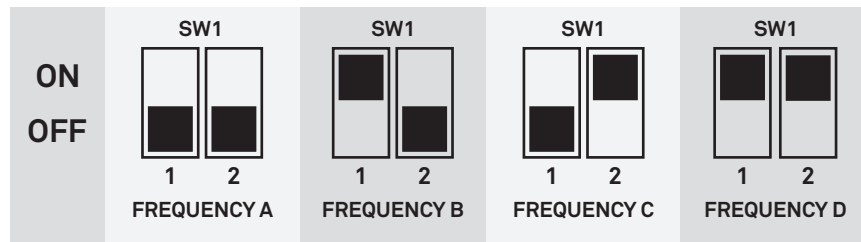
**Programming codes:**

01. Press **SEL** repeatedly to select the desired channel, indicated by the CS1 or CS2 LED's that, when selected, will flash intermittently.
02. You have 15 seconds to choose the desired channel by pressing the **SET** button.

The channel is then active to receive a code from a RTX 2252 sensor. After that time, the module returns to the normal state (stand-by).

**Frequencies:**

You can select four different operating frequencies, all of them in the band of 868 MHz.



## 03. CONFIGURATION

### RTX 2278-BASE MODULE (OPTIONAL)

The choice of operating frequency is made the same way the pairing devices, running through the **SW1** Dip Switch present in both the RTX 2278 device as in the RTX 2252 device.

The choice must be made before making the pairing of RTX2252 and RTX2278 devices, selecting one of the four frequencies available.

Obligatorily, the chosen frequency must be equal in both devices.

Similarly, it is recommended to check if the chosen band is free to be selected.

**Check the band usage status:**

01. Press the **SET** key to the position on the **M.P. LED**.

The base will conduct a chosen frequency verification and if this frequency is already in use, os **MON** and **M.P. LEDs** will flash intermittently.

If the frequency is free, it is ok to proceed with the programming.

**Channel selection - RTX 2278:**

01. Access the programming menu by pressing the **SET** button, the LED MON MP and LED will flash alternately.
02. With **SEL** button, select the desired channel (Code Sensor1 or Code Sensor 2) to pair the RTX 2252 sensor.
03. It now has 10 seconds to press the **SET** button from the RTX 2252 sensor, in order no pair it with the RTX 2278.

**Setting the RTX 2252 sensor (CS1 and / or CS2) in the RTX 2278 base device:**

01. Press the RTX 2278 **SEL** button, and the SENSOR CODE LED 1 will start flashing.
  02. Press the **SET** button on the RTX 2252 sensor and its TX LED will issue 5 fast signals intermittently, signaling the RTX 2278 memorization .
  03. The RTX 2278 CS1/CS2 LED remain on and programming is complete.
- If the RTX2278 does not receive any code from RTX 2252 within 10 seconds, it will exit the programming phase. To pair another RTX 2252 sensor with the RTX 2278, repeat the same steps, selecting the free channel from the RTX 2278.

**To delete all configured codes from the RTX 2278 device:**

01. Press the **SEL** button and the **CODE SENSOR 1 LED** will start flashing
02. Press the **SET** button and the **CODE SENSOR 1 LED** will be deleted.

To erase the sensor 2 codes, repeat the same steps selecting the **CODE SENSOR 2 LED** during step 01.

**Restore the RTX 2278 device to the factory setting:**

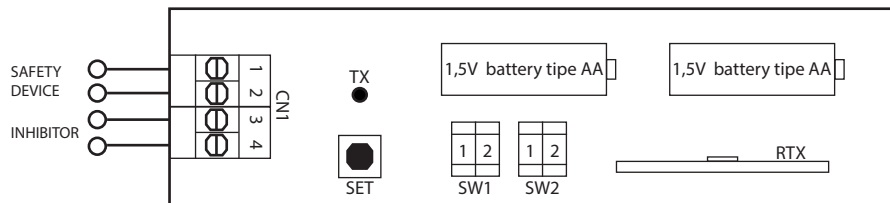
Press the **SEL** and **SET** buttons continuously for more than 2 seconds.

All signaling LEDs will light up briefly and will be issued three beeps, signaling the operation success.

## 03. CONFIGURATION

### RTX 2252-SENSOR MODULE (OPTIONAL)

#### • TECHNICAL SPECIFICATIONS



• Powered by stacks	2x 1,5V DC Alcaline (AA)
• Operating Frequency	868 MHz FSK Band
• System capacity in free field	10 + 20 m máx.
• Operating temperature	- 10 to +55°C
• Dimensions	120x80x50mm
• External material	ABS UL94V-0 (IP56)

CN1	01 • Safety device input (NC) or 8K2.
	02 • Safety device input (NC) or 8K2.
	03 • Inhibitor input (NC)
	04 • Inhibitor input (NC)

#### • OPERATION

The RTX 2252 device (sensor) allows the connection of safety bands of the classic type NC (normally closed contact) or 8K2 Ohm resistive type.

This sensor operates only in combination with the control base - 2278 RTX.

The device is powered with stacks, avoiding any cable connection.

**After stored in RTX 2278 device, sends you the following information:**

- **Survival signal:** Check periodically if the radio connection between the devices is functioning properly and informs the base.
- **Alarm signal:** Tells the basis that the safety device is activated.

## 03. CONFIGURATION

### RTX 2252-SENSOR MODULE (OPTIONAL)

- **Discharged stack signal:** Tells the base the stack status.

#### Operation with Contact Inhibitor:

The RTX 2252 device (sensor) enables the connection of a contact (NC) for temporarily inhibiting of the safety band connected to the sensor.

With the application of one micro-switch (CN1, connector 3 and 4), the band can be disabled for the motor does not reverse when it reaches the end of the closure and presses the band.

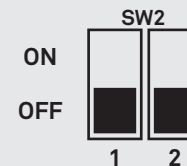
Aplique 1 micro (NC), de forma que comute para NA centímetros antes da banda comprimir.

In this case, the band can be pressed without causing reverse movement.



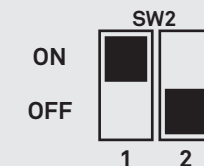
When the inhibitor input is not used, it should always be made a bridge (jumper) between 3 and 4 inputs.

NC



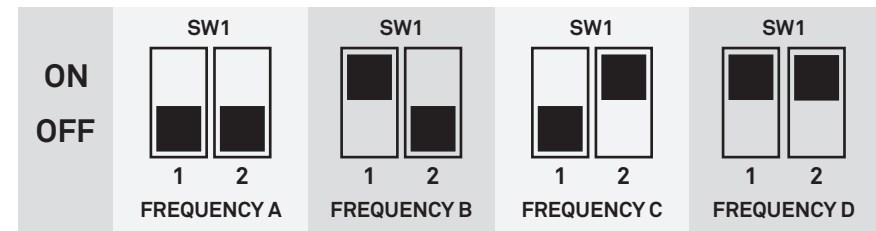
**DIP 1= OFF** - Type NC Classic (standard)  
Normally Closed

8K2



**DIP 1=ON** - Type Resistive 8K2 Ohm  
Operation

Setting the frequency A, B, C or D in RTX 2252 must be coincident with the RTX 2278 base module configuration (see page 11A).



## 03. CONFIGURATION

### RTX 2252-SENSOR MODULE (OPTIONAL)

#### • CONSUMER OPERATION

It is possible to select two different consumption patterns in the functioning of RTX2252 (SENSOR) devices.



#### Energy saving is disabled = OFF

This function should be used only when there is a considerable distance between RTX 2252 and 2278 sensor because it has a very high batteries consumption.



#### Energy saving enabled=ON

The sensor's transmission power is slightly lower, decreasing the radio capacity, which can affect the settings at installation time.

**NOTE:** When the battery is discharged, the TX LED from the RTX 2252 sensor will get a quick intermittency signal. At that point it sends signal to the RTX 2278 (Base) device, which will act as indicated on [page 9A](#).



- When the RTX 2252 Device (sensor) is removed from an installation, it is advisable to remove the batteries to prevent the sensor continues to transmit uselessly
- It is advisable to replace device stacks immediately in the presence of a flashing TX LED.

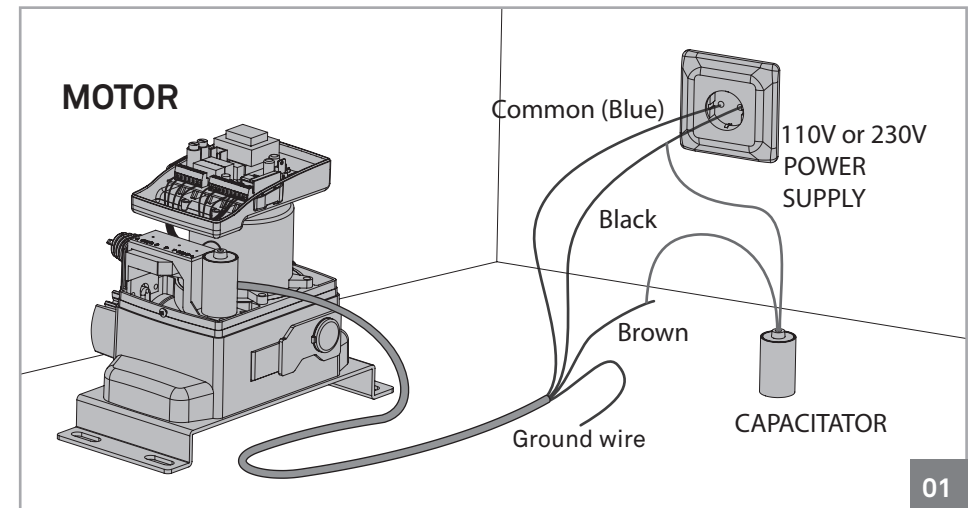
## 04. COMPONENTS TEST

### SCHEMES FOR CAPACITORS

To detect which components have problems during a sliding automatism installation, sometimes it's necessary to conduct tests with a direct connection to a 110V or 230V power supply. For this, it's necessary to interpose a capacitor on the connection so that the motor can work (check the capacitor type to be used in the product's manual). In the below diagram is shown how this connection must be made and how to merge the different component wires.

#### NOTES:

- To perform the tests you don't need to remove the automatism from its place, because this way you can understand if the automatism, directly connected to the power, can function correctly.
- The order of capacitor wires linked with the automatism wires are not important, as long as you link, one to the Brown wire and the other to the Black one;
- The common wire of the motor must always be connected to the power supply;
- To reverse the automatism functioning direction, switch the Black wire with the Brown wire of the automatism.



All tests must be performed by skilled technicians due to serious danger associated with the misuse of electrical systems!!

## 04. COMPONENTS TEST

### PHOTOCELLS TEST AND TRANSMITTERS

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- **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 function/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

Anomaly	Procedure	Behavior	Procedure II	Discovering the origin of the problem			
• Motor 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 gate from control board and test them by connecting directly to power supply in order to find out if they have problems (see page 13B).	4 • If the gate works, the problem is on the control board. Pull it out and send it to our MOTORLINE technical services for diagnosis;	5 • If the gate doesn't work, remove them from installation site and send to our MOTORLINE technical services for diagnosis.
• Motor doesn't move but makes noise	• Unlock motor and move the gate by hand to check for mechanical problems on the movement	• Encountered problems?	• Consult a qualified gates technician.	1 • Check motion axis and associated motion systems related with the motor and the gate to find out what is the problem.			
		• The gate 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 13B).	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.
• Gate doesn't make complete route	• Unlock motor and move the gate by hand to closed position. Lock motor again and turn of power supply for 5 seconds. Reconnect it and send order to open gate using transmitter.	• Gate 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 gate 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.	<b>A) SECURITY SYSTEMS:</b>  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>B) START SYSTEMS:</b>  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.  <b>NOTE:</b>  In case procedures described in sections A) and B) don't result, remove control board and send to our technical services for diagnosis.	
• Motor opens but doesn't close	• Unlock motor and move gate by hand to check for mechanical problems on the gate.	• Encountered problems?	• Consult a qualified gates technician.	1 • Check all motion axis and associated motion systems related with the gate to find out what is the problem.			
		• The gate 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 gate 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 sufficient 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.	<b>NOTE:</b> Setting force of the controller should be sufficient to make the gate open and close without stopping, but should stop and invert with a little effort from a person. In case of safety systems failure, the gate shall never cause physical damaged to obstacles (vehicles, people, etc.).



# 06. CONNECTION SCHEME

## COMPONENT CONNECTION TO THE CONTROL BOARD

