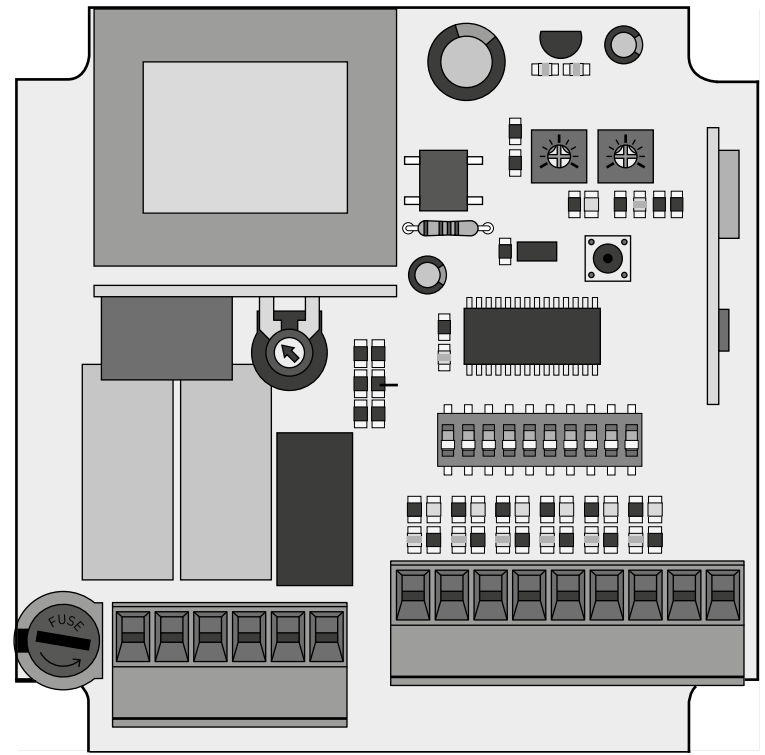
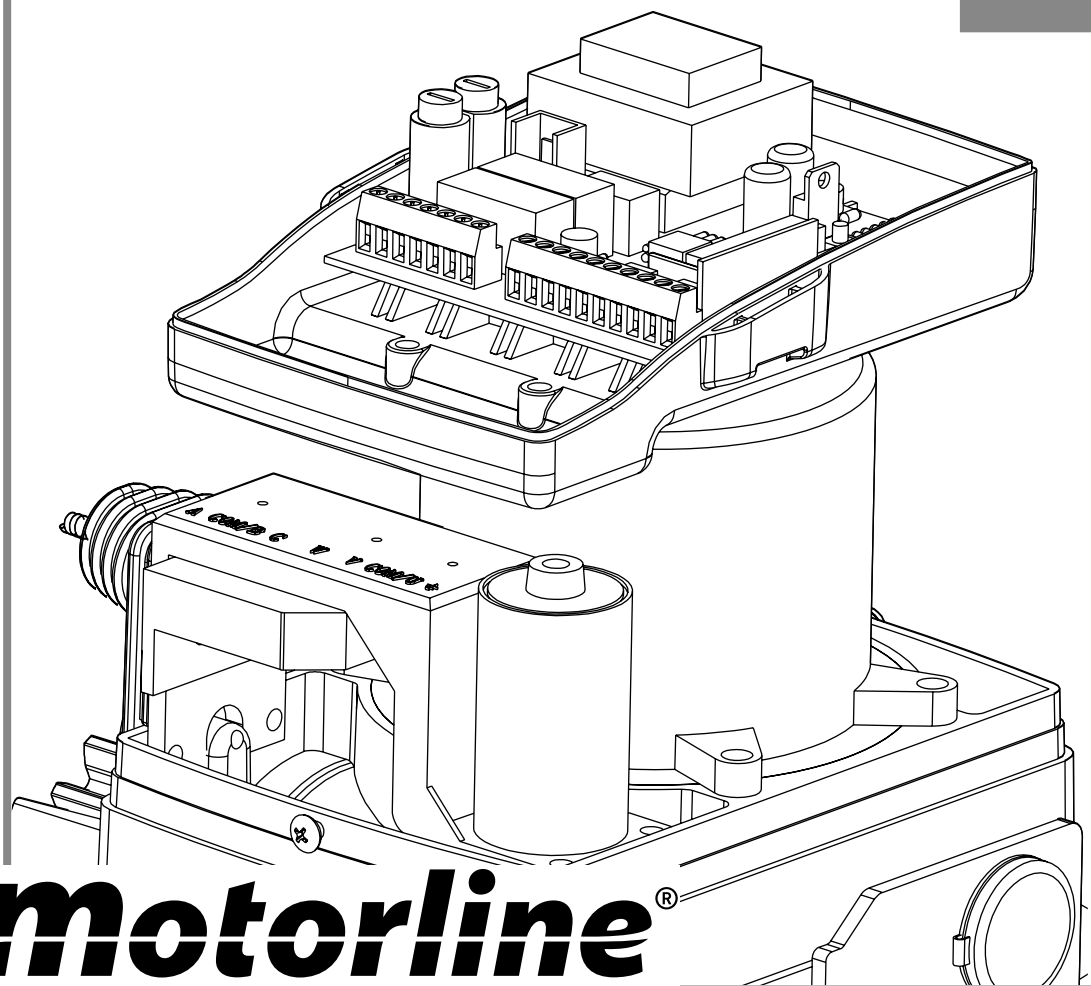




MC103

USER / INSTALLER MANUAL



00. CONTENT

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01. SAFETY INSTRUCTIONS

STANDARDS TO FOLLOW

ATTENTION :

- To ensure the safety of people, 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 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. Must call qualified technician only.
- Connect the automatism to a 230V plug with ground wire.
- Control board for indoor use.

02. THE CONTROL BOARD

TECHNICAL SPECIFICATIONS

	110V	230V
• Power supply	AC 110V 50/60Hz	AC 230V 50/60Hz
• Lightbulb's output	AC110V 40W máx.	AC230V 100W máx.
• Motor's output	AC110V 750W máx.	600W máx.
• Auxiliary accessories output	12 VDC 2W máx.	
• Working temperature	-20°C a +50°C	
• Incorporated Radio Receptor	433,92 Mhz	
• OP Transmitters	12 bits or Rolling Code	
• Maximum memory capacity	30 Codes	
• Soft Stop	1sec after limit-switch	
• Torque electrical regulation	Yes	

• CONNECTOR'S DESCRIPTION

CN1	<ul style="list-style-type: none"> 01 • 230V Line Input (phase) - PH 02 • 230V Line Input (neutral) - NEUT 03 • Motor's Output - Common - COM MOT 04 • Motor's Output - Closing - CLOS 05 • Motor's Output - Opening - OPEN 06 • Lightbulb/Courtesy light's output (AC230V 100W max) - LAMP
CN2	<ul style="list-style-type: none"> 07 • Opening limit switch input (NO) - FCA 08 • Closing limit switch input (NO) - FCC 09 • Safety band input (8K2Ω ou NC) - COSTA 10 • Photocells input (NC) - PHOTO 11 • Common output - COM 12 • Complete opening button's input (NO) - UP/OPEN 13 • Pedestrian opening button's input (NO) - DOWN/CLOSE 14 • Photocells power supply output - 12VDC 15 • Common output - COM
JP1	<ul style="list-style-type: none"> • Place Shunt for working time between 7 to 40 seconds • Place Shunt for working time between 7 to 120 seconds

02. THE CONTROL BOARD

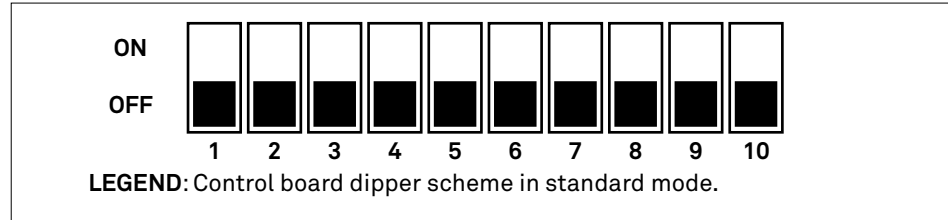
PROGRAMMING PRE-RECOMENDATIONS



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:

Connector CN1	<p>Capacitor: 04 and 05 • Connect the capacitor between the 04 and 05 outputs, along with the motor phases.</p> <p>Lightbulb: 06 • Output for lightbulb or courtesy light, according to the selected Dipper 10 (see p. 03B). Should be used in all the lightbulb that do not have electrical circuit, because the output itself is programmed to create an light intermittent effect (apply the lightbulb only with bushing and bulb). In flashing mode, this will only work during the engine's work time. In courtesy light mode, it will operate during opening time and pause time in both opening and closing. Should be aware of it's maximum consumption capacity, as this output only supports 100W. If the consumption is higher, intersperse a power relay.</p>
Connector CN2	<p>Limit-switches: 07 and 08 • Make sure that the limit-switches connections are synchronized with the LEDs FCC and FCA (see explanation in pág.04B). Test it by moving the automatism limit-switch spring by hand to see if it lights up the FCC and FCA LEDs in the correct ways (the FCC LED goes off with the closing signal and the FCA LED goes off with the opening signal).</p> <p>Safety circuits: 09 • This circuit allows connection of all security band types. This device operates in the opening reversing the gate direction for 1 sec and during the closing, reversing it for 3 sec. 10 • This circuit allows connection of all photocell types. This device operates only during the pause time and during closure. At pause time it keeps the gate open and when accionated and during closing maneuvers, stops and starts the complete gate opening.</p>

03. DIPPERS



DIPPER BOARD FUNCTIONS



	ON (up)	OFF (down)
Dip 1	Disables the use of safety band (CN2-9).	Enables the use of safety band (CN2-9).
Dip 2	Disables the use of the opening limit-switch (CN2-7).	Enables the use of the opening limit-switch (CN2-7).
Dip 3	Disables the use of the closing limit-switch (CN2-8).	Enables the use of the closing limit-switch (CN2-8).
Dip 4	Disables the use of photocells (CN2-10).	Enables the use of photocells (CN2-10).
Dip 5	Active SOFT STOP for 1sec after receiving limit-switch signal.	Deactivate SOFT STOP.
Dip 6 and Dip 7	 Dip 6 ON Dip 7 ON Step-by-step function with self-closing: <ul style="list-style-type: none"> • If it receives order from a device during the closing maneuver, reverses direction and stops only at end of the working time or the opening limit-switch. • If it receives an order during an opening operation, it stops and closes automatically after the pause time. 	 Dip 6 OFF Dip 7 OFF Step-by-step function without self-closing: <ul style="list-style-type: none"> • Gate opens or closes only if it receives transmitter signals. • The functioning will be open-stop-close-stop-open...

03. DIPPERS

DIPPER BOARD FUNCTIONS

Dip 6 and Dip 7	 Dip 6 ON Dip 7 OFF resent-Man function: <ul style="list-style-type: none"> • Gate only opens or closes while pressing the device's configured button . • The functioning will be open-close-open-close... • Pedestrian button is disabled. 	 Dip 6 OFF Dip 7 ON Step-by-step function with self-closing, if the gate is stopped at the opening limit-switch's end. <ul style="list-style-type: none"> • If stopped by transmitter signal during the opening or closing course, it will be stopped until new order.
	Enables Condominium function. <ul style="list-style-type: none"> • After starting the opening course, it rejects all transmitter signals during until it opens completely. • If it receives a transmitter signal during pause time, it starts the closing maneuver. • If it receives a transmitter signal during closing maneuver, it reverses and starts to opening. 	Disables the condominium function and starts the 6 and 7dippers functions.
Dip 9	Changes security band type for 8K2Ω resistance.	Changes security band type for dry contact (NC).
Dip 10	Changes LAMP output for fixed courtesy light (CN1 - terminal 6) <ul style="list-style-type: none"> • Remains on during work and pause time. 	Changes LAMP output for intermittent lightbulb (CN1 - terminal 6) <ul style="list-style-type: none"> • Remains ON only during working time.

• NEW TRANSMITTER CONFIGURATION

- 01** • Press the P1 button once and the CODE LED will blink during 2sec.
- 02** • While the CODE LED is light up, press the complete opening desired transmitter key during 1sec (while pressing the transmitter key, the CODE LED must slowly flash indicating the code reception).
- 03** • The CODE LED will be lighted again and you must now press the transmitter button for pedestrian opening.
- 04** • Let the CODE LED go off and the transmitter is configured.

NOTE: If you do not want the pedestrian button, leave the **CODE LED** go off after pressing the first button.

04. CONFIGURATION

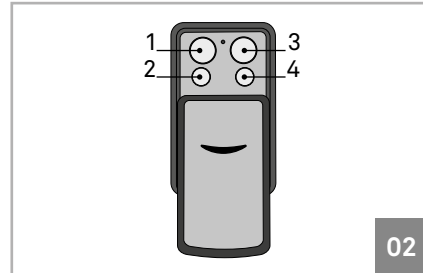
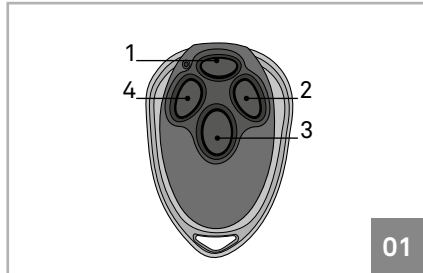
TRANSMITTER CONFIGURATION

• DISTANCE TRANSMITTER PROGRAMMING

- 01 • Press the 1 and 2 button from an already configured transmitter and the CODE LED will light.
- 02 • When the CODE LED stays lighted, press the complete opening desired transmitter key for 1 sec(while pressing the key, the CODE LED must slowly flash indicating the code reception).
- 03 • The CODE LED will be lighted again and you must now press the transmitter button for pedestrian opening. Wait 5sec and can now use the transmitter.

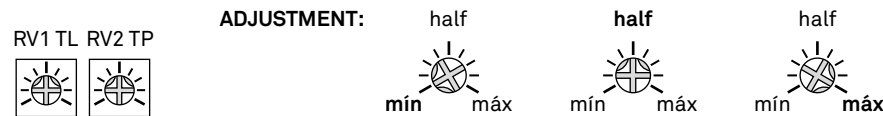
• ERASE ALL CONFIGURED TRANSMITTERS

- 01 • Press and hold the P1 button for 10sec. The CODE LED will flash in the first 2sec, stay illuminated until the 8sec and flash faster until the 10 sec.
- 02 • When the CODE LED turns off, release the P1 button and the CODE LED will light and stay lighted for 3sec.
- 03 • The CODE LED will turn off at the end of 3sec signaling the configuration success.



• REGULATION OF WORKING AND PAUSE TIME

For time adjustment you must use RV1 TL (working time) and RV2 TP (pause time) potentiometers. Rotate the potentiometers between the min and the max as shown in the figures below.



- In RV1 TL potentiometer, the minimum value is always 7 sec. The maximum value depends on the J1 jumper, if it has a Shunt is 40 sec and without Shunt is 120 sec.
- In RV2 TP potentiometer, the minimum value is 7sec and maximum 200seg.

04. CONFIGURATION

FUNCIONALITIES

• REGULATION OF WORKING AND PAUSE TIME

NOTE:

- Adjust the Working Time potentiometer so that, in case of a limit-switch failure, the motor stops from the Working Time without causing any damage.

EXAMPLE: If the actual working time between opening and the closing limit-switch is 15 sec, the working time must be adjusted to about 18 sec.

• LIMIT-SWITCHES CONFIGURATION

- To enable / disable the limit-switches use, use the 2 and 3 Dippers. The limit-switch entry connections are in connector CN2, being the terminal 7 the opening and the terminal 8 the closure.

To check if the limit-switches are properly connected, do a simple manually test - when activating the opening the limit-switch, the FCA LED must go off, when activating the closing limit-switch, the FCC LED must turn off.

If the LEDs go off wrongly, switch the wires from the 7 and 8 terminals.

• SETTING THE WORKING ENGINE'S DIRECTION

The engine's input connections are in the connector CN1. Use terminal 4 for the closing phase and terminal 5 for the opening phase.

To verify that the operating direction is correct, proceed as follows:

- 01 • Turn off the central's power;
- 02 • Unlock the automatism, place the gate half way and re-lock.
- 03 • Turn on the central's power and give the an order with the transmitter. **The gate has to start opening! If it starts to close, switch the wires from terminals 4 and 5**

• SOFT START/STOP

- 01 • To activate the soft start/stop , put the Dipper 5 ON.

NOTE • The soft start/stop existing in the central lasts for 1 second, after receiving the limit-switch signal.

• SECURITY BAND

- 01 • To enable the use of security band, place Dipper 1 in OFF.
- 02 • Place Dipper 9 to ON if you want 8K2Ω resistive security band, or OFF for NC dry contact safety band.

04. CONFIGURATION

FUNCIONALITIES

• SECURITY BAND

The security band operates as follows:

- At opening, reverses the travel direction for 1sec to relieve and stops. The gate will be stopped until new order is sent from a device.
- At closing, it reverses the travel direction for 3sec to relieve and stops. If you have the automatic closing enabled, the gate will start closing again after the pause time.

• SAFETY PHOTOCELLS

- 1 • To enable use of photocells, place the Dipper 4 to **OFF**.

Safety photocells act as follows:

- At opening maneuvers, they have no action.
- When opened, the photocells cause the gate to remain open if there is an obstacle in front of them.
- At closing maneuvers, the gate stops and starts to open immediately, stopping at the end of the working time or at the end of the opening limit-switch.

COURTESY LIGHT / INTERMITTENT LIGHTBULB

- 01 • Place Dipper 10 to ON if you want the courtesy light, or OFF for intermittent lightbulb.
- The courtesy light stays on during any the gate maneuvers, and even during the pause time defined in both opening or closing maneuvers.
- The flashing lightbulb only works during gate maneuvers.

NOTE: Should work with simple lamp without the circuit board. If the lightbulb has a circuit board, you can not obtain the courtesy light function.

• INSTALLATION PROCESS

- 01 • Connect the control board to a 230V AC power supply (terminals 1 and 2 - CN1).
- 02 • Configure the Dippers according to the used devices and the desired working type.
- 03 • Configure transmitter.
- 04 • Adjust the RV1TL and the RV2TP potentiometers to minimum, in order to start the configuration.
- 05 • Unlock the gate, put it half way manually and re-lock.

05. INSTALLATION

FUNCIONALITIES

• INSTALLATION PROCESS

- 06 • Give a start with the transmitter and the gate has to start OPEN!

If it starts to close, stop it with the transmitter, switch off the control board chain and replace the automatism wires (Terminals 4 and 5 - CN1).

- 07 • Check the limit-switches, so that the LEDs FCA and FCC correctly turn off when enabling the opening and closing limit-switches.

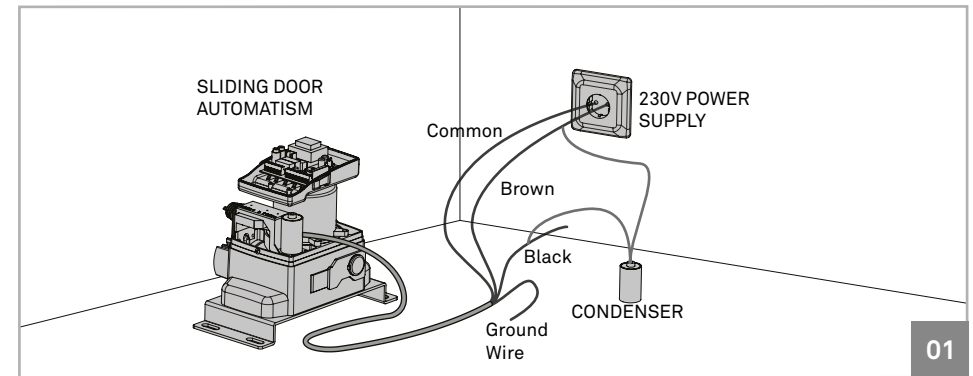
- 08 • Close the door manually and give the order to open with the transmitter.

If the gate does not complete the opening course, adjust the potentiometer RV1TL to achieve desired working time.

Adjust the potentiometer RV2TP to obtain the desired pause time.

- 09 • The control board is now completely configured!

• COMPONENTS TEST



01

To detect which components have problems in an installation, it is sometimes necessary to conduct tests with direct connection to a 230V power supply.

NOTES:

- The condenser wiring order with the automatism wires are not important as long as you connect one with the **brown wire** and the other with the **black wire**.
- The common should always be connected to the power supply.



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

06. TROUBLESHOOTING

INSTRUCTIONS FOR FINAL CONSUMERS

INSTRUCTIONS FOR SPECIALIZED INSTALLERS

Problem	Procedure	Behavior	Procedure II	Discovering the origin of the problem			
• Door doesn't work	• Make sure you have 230V power supply connected to control board and if it is working properly.	• Still not working	• Consult a qualified MOTORLINE technician.	1 • Open control board and check if it has 230V power supply; 2 • Check input fuses;	3 • Disconnect the motor from control board and test them by connecting directly to power supply in order to find out if they have problems	(see page 5.B). 4 • If the motor works, the problem is on the control board. Pull it out and send it to our MOTORLINE technical services	for diagnosis; 5 • If the motor 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 an experienced gate expert.	1 • Check all 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 capacitors; 2 • If capacitors are not the problem, disconnect motors from	control board and test them by connecting directly to power supply in order to find out if they have problems (see page 05.B);	3 • If the motors work, the problem is from control board. Pull it out and send it to our technical services for diagnosis;	4 • If the motors doesn't work, remove them from installation site and send to our MOTORLINE technical services for diagnosis.
• Motor opens but doesn't close	• Unlock motor and move the gate by hand to closed position. Lock motor again and turn off 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.	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) SISTEMAS DE START: 1 • Disconnect all wires from START terminal input 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.
• Gate doesn't make complete route	• Unlock motor and move gate by hand to check for mechanical problems on the gate.	• Encountered problems?	• Consult an experienced gate expert.	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).	5 • If this doesn't work, remove control unit and send it to MOTORLINE technical services.	NOTE: 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.).

07. CONNECTION SCHEME

COMPONENT CONNECTION TO THE CONTROL BOARD

