CONTROL PANEL FOR DOUBLE/SINGLE SWING GATES 230V ac

PROTECO GATE AUTOMATIONS

Instructions Manual

English

Q81A

Control panel for 230V ac operators – single and double leaf swing gates

- Automatic programming mode with obstacle detection
- Sequential programming mode: adjustable force, slow down, working time per single motor
- Immediate closing
- Pedestrian opening
- Multi-occupation feature
- Second radio channel interface (optional)
- Output for electrolock connection
- Ram blow and lock pulse function
- Built-in radio receiver 433,92 MHz (32 codes) suitable for fixed or rolling code transmitters
- Input for 8K2 resistive safety edge
- Self diagnosis of malfunctions by LED coding

TECHNICAL FEATURES

Item code	PQ81A, PQ81A1D
Pcb's dimensions	137 x 84 x 37 mm
Junction box dimensions	220 x 290 x 90 mm
Pcb's weight	160 g
Main Power supply	230 ~ 50-60Hz
Power supply Tolerance	-10% +20%
Transformer	230/21Vac – 15VA
Main Fuse	5 A
Rated power	600 W
Max. power draw	3.5 A
Power draw in stand-by	30 mA
Blinker	24 Vac, max 20 W
Accessories	24 Vdc , max 5 W
Electrolock	12 Vdc, max 15 W
Operating temperature	-20 +50 °C
Protection rating	IP55

03_2016

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English

Contents

1. SAFETY INSTRUCTIONS AND PRELIMINARY CHECKS

WARNING! Important instructions for the safety of people, READ CAREFULLY!

Save this manual for future consultation.

Do not allow children to play with the fixed command devices, or in the gate's area of operation. Keep any remote control devices (i.e. transmitters) away from the children as well

Children are forbidden to carry out cleaning and maintenance unless accompanied by adults.

Children over 8 years, persons with reduced physical, sensorial, mental capabilities or unexperienced people are limited to use the operator unless accompanied by a supervisor or unless they get properly aware of potential hazards associated.

Always cut the power off before operating.

Make sure the earth connection is duly wired.

Wiring, installation and functional tests must be carried out by expert qualified personnel in full compliance with current regulation EN12445.

Use of this control panel must be restricted to the transformer supplied by the Manufacturer.

A circuit breaker must be fitted close to the gate in compliance with the wiring diagram and installation instructions (see paragraph 3).

Stay clear of the gate's area of operation when in motion

Frequently check the system to see whetherany anomalies or signs of wear and tear appear on the moving parts, on the component parts, on the securing points, on the cables and any accessible connections.

If the system requires repairs or modifi cations, release the operator and do not use it until safety conditions have been restored.

This control panel is designed to automate single and double leaf gates.
In case you wish to automate a single leaf.

gate be extremely careful to sections marked by this symbol

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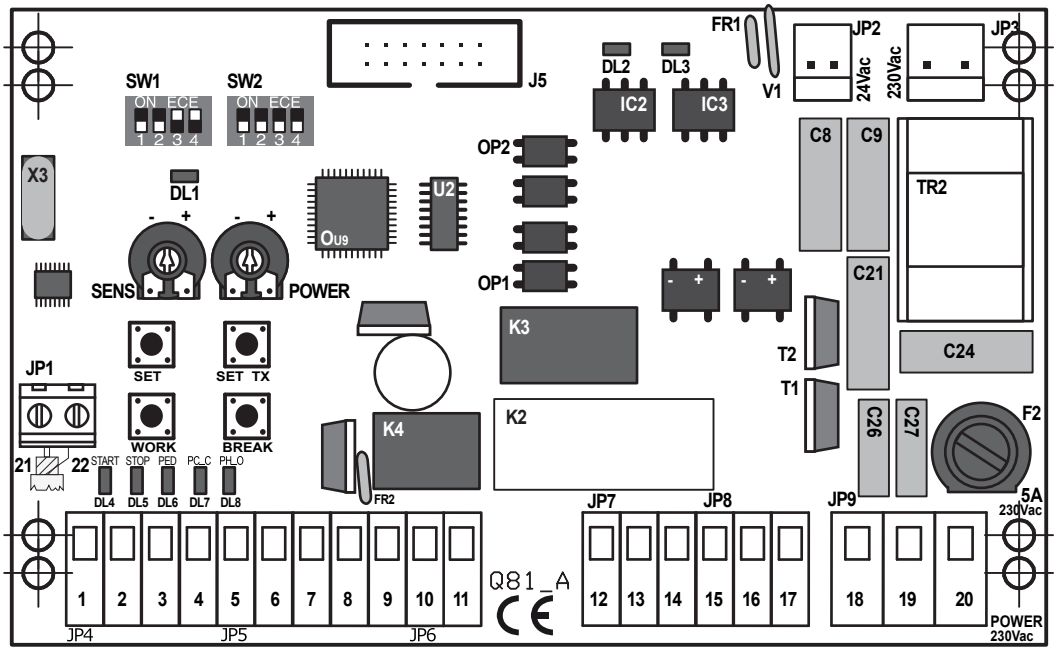
2. DESCRIPTION AND MAIN COMPONENTS

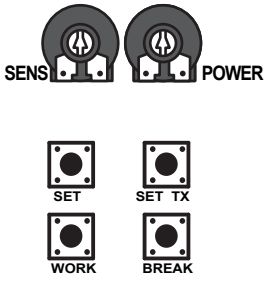


J5 = input for electrolock or second radio channel jacks
F2 = line fuse 230V 5A
FR1 = self resettable fuse 24V 1,6A
FR2 = self resettable fuse 24V 0,6A
V1 = varistor secondary
K2/K3 = motors relé
K4 = flashing light relé
TR2 = filter
JP1 = GREEN TERMINAL - aerial connection
JP2 = Secondary MOLEX card 24V ac
JP3 = Primary MOLEX card 230V ac
JP4 = BLUE TERMINAL – command devices
JP5 = RED TERMINAL - line and photocells
JP6 = YELLOW TERMINAL – flashing light
JP7 = ORANGE TERMINAL - motor 1 (M1)
JP8 = BLACK TERMINAL - motor 2 (M2)
JP9 = GREEN TERMINAL – line 230V / earth
SENS = OBSTACLE DETECTION adjuster
POWER = THRUST adjuster
SW1 - SW2 = FUNCTIONS SELECTION – dip switches mode

WARNING LED

DL1 = PROGRAMMING
DL2 = THRUST MOTOR 1
DL3 = THRUST MOTOR 2
DL4 = START
DL5 = STOP
DL6 = PEDESTRIAN START
DL7 = PHOTOCELL IN CLOSING
DL8 = PHOTOCELL IN OPENING

PROGRAMMING BUTTONS



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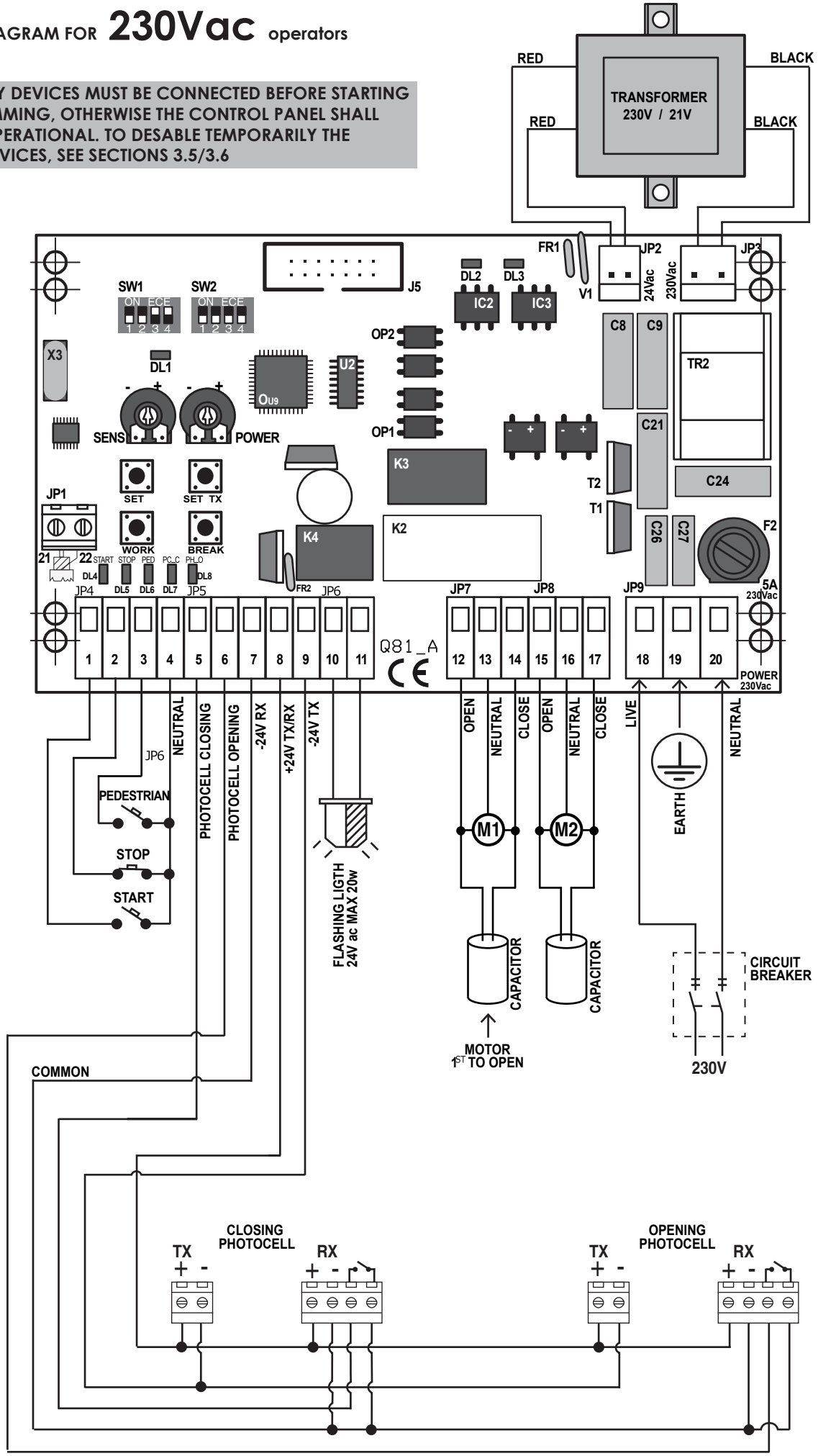
3. ELECTRICAL CONNECTIONS

WIRING DIAGRAM FOR 230Vac operators

N.B.:

ALL SAFETY DEVICES MUST BE CONNECTED BEFORE STARTING PROGRAMMING, OTHERWISE THE CONTROL PANEL SHALL NOT BE OPERATIONAL. TO DESABLE TEMPORARILY THE SAFETY DEVICES, SEE SECTIONS 3.5/3.6



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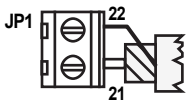
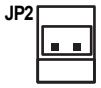
JP1 = Aerial connection

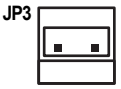
21	signal wire
22	earth wire



JP2 = RED WIRES - secondary MOLEX card 24V dc

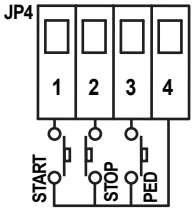


JP3 = BLACK WIRES - primary MOLEX card 230V ac



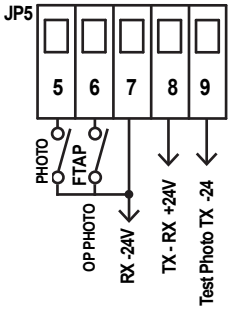
JP4 = BLUE TERMINAL – command devices

1	START (N.O. contact)
2	STOP (N.C. contact)
3	PEDESTRIAN (N.O. contact)
4	NEUTRAL



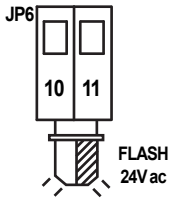
JP5 = RED TERMINAL – line and photocells

5	5 photocell in closing (N.C. contact)
6	photocell in opening (N.C. contact)
7	RX photocells -24V
8	TX/RX +24V
9	TX photocells -24V



JP6 = YELLOW TERMINAL – flashing light

10	flashing light 24V ac - max 20W
11	flashing light 24V ac - max 20W

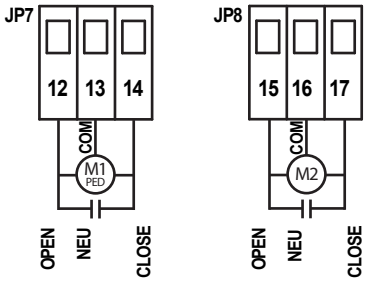


JP7 = ORANGE TERMINAL - MOTOR 1 (**M1**)

12	OPEN	} MOTOR **M1**
13	NEUTRAL	
14	CLOSE	

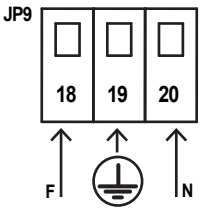
JP8 = ORANGE TERMINAL - MOTOR 2 (**M2**)

15	OPEN	} MOTOR **M2**
16	NEUTRAL	
17	CLOSE	



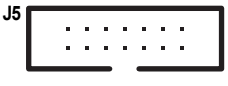
JP9 = GREEN TERMINAL - line 230V + earth

18	LINE
19	EARTH
20	NEUTRAL



Make sure a circuit breaker is properly fitted to the gate electric box.

J5 = input for electrolock and second radio channel jacks



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3.1 MOTORS WIRING

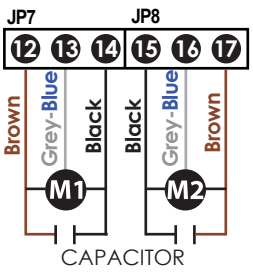
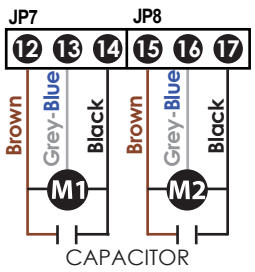
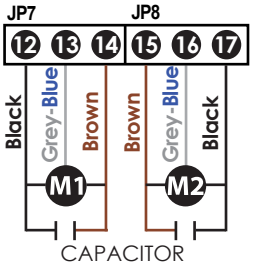
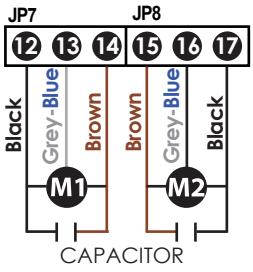
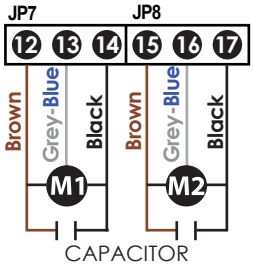
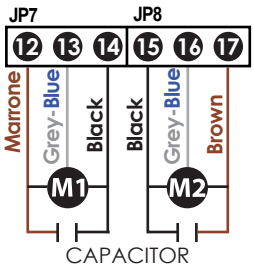
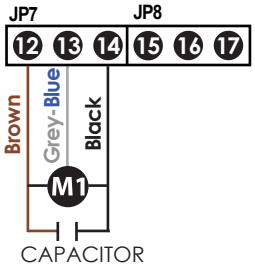
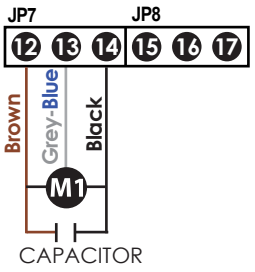
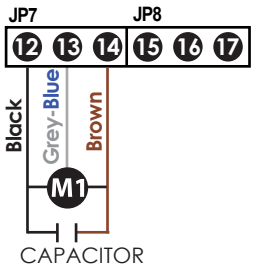
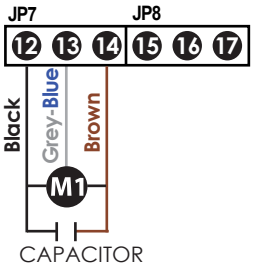
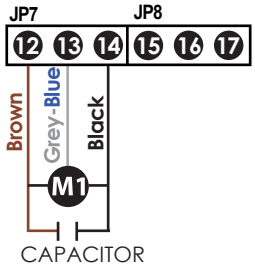
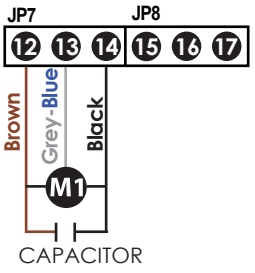
M1 motor 1 → first to open and **last to close**
M2 motor 2 → last to open and **first to close**

Connect motor 1 **M1** to **12 – 13 – 14**, terminal **JP7**.
Connect motor 2 **M2** to **15 – 16 – 17**, terminal **JP8**.

For single leaf gate, connect the motor to **12 – 13 – 14**, terminal **JP7.**

Proceed to wire the operator according to the below table:

For ARTICULATED ARM OPERATORS disable the motors test – SWITCH 1 (SW1) DIP no. 4

GATE TYPE	AUTOMATION MODEL		
	Traditional Ram Articulated ram motor	Slimline Ram Wheel-driven motor	Underground motor
Left leaf 1st opening (M1)			
Right leaf 1st opening (M1)			
Left leaf (M1)			
Right leaf (M1)			

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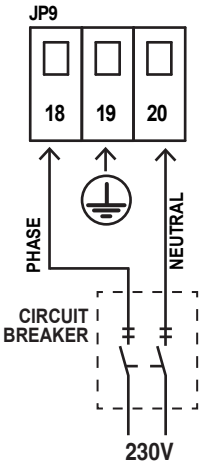
3.2 MAIN POWER

The main line must be protected by a proper **CIRCUIT BREAKER** .

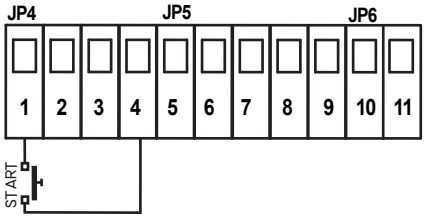
Connect the line 230V to **18 – 19 – 20**, terminal **JP9**,
fulfilling the polarity (18 PHASE – 19 EARTH – 20 NEUTRAL).



3.3 START DEVICES

Wire the START contact (N.O. contact) to **1 – 4**, terminal **JP4.**

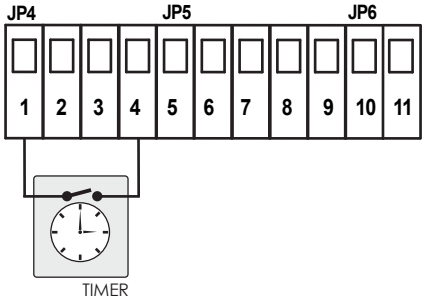
An additional START contact can be wired in **PARALLEL** (N.O. contact)



3.3.1 TIMER

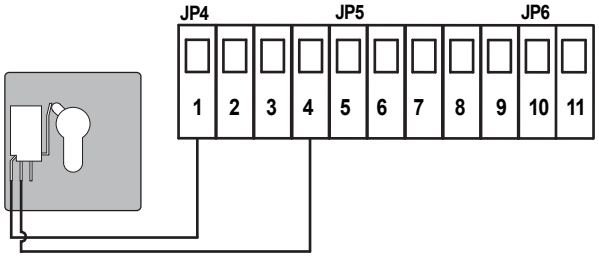
It is possible to wire a TIMER (N.O. contact) to **1 - 4**, terminal **JP4**.

WARNING:
when connecting a TIMER, the multi-users function must be enabled. SW1 DIP 2 = ON



3.3.2 KEY SWITCH

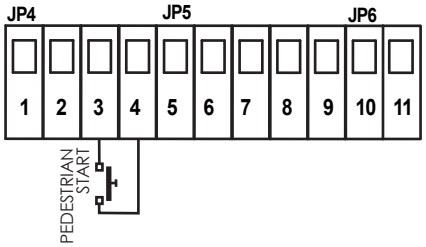
Wire the KEY SWITCH (N.O. contact) to **1 – 4**, terminal **JP4**.



3.4 PEDESTRIAN OPENING

Wire the PEDESTRIAN START (N.O. contact) to **3-4**, terminal **JP4**.

An additional PEDESTRIAN START contact can be wired in PARALLEL (N.O. contact)



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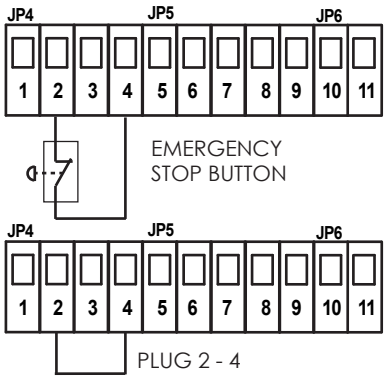
3.5 EMERGENCY STOP BUTTON

Wire the STOP BUTTON (N.C. contact) to **2 - 4**, terminal **JP4**.
An additional STOP BUTTON contact can be wired in **SERIES** (N.C. contact).



The EMERGENCY STOP BUTTON is important for the safety of people and objects

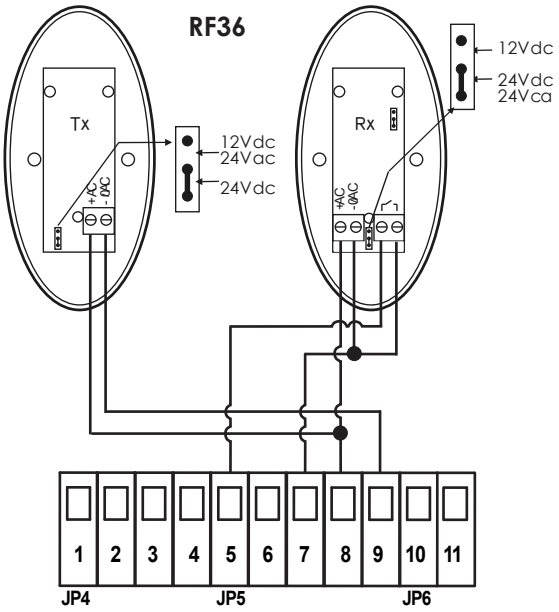
N.B.: To desable the STOP BUTTON during installation, **plug 2 and 4 together**.

3.6 PHOTOCELLS

3.6.1 Photocells IN CLOSING

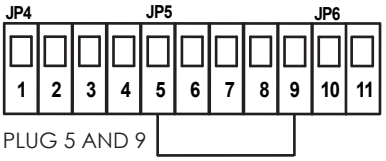
Feed the photocells through **7-8-9**, terminal **JP5**.
Wire the photocell contact (N.C. contact) to **5-7**, terminal **JP5**.
An additional photocell set can be wired in **SERIES** (N.C. contact).

- If the photocell beam is broken during CLOSING, the gate **stops and reverses after 1,5 sec**.
- If the photocell beam is broken during OPENING, the gate keeps on working normally.



The PHOTOCELLS IN CLOSING are important for the safety of people and objects.

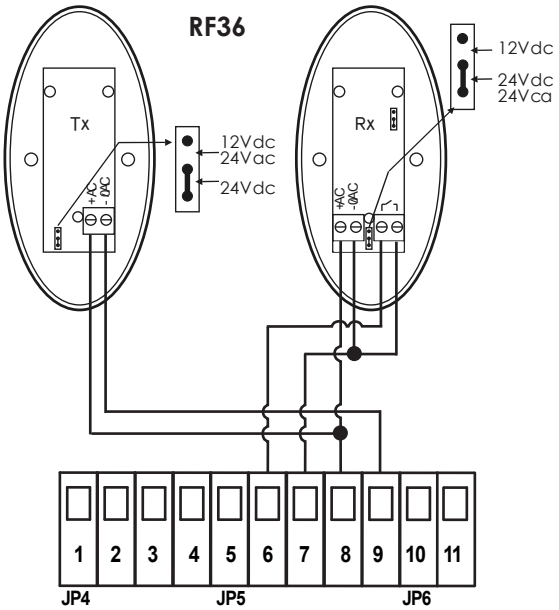
N.B.: To desable the photocell in closing during installation, **plug 5 and 9 together**.



3.6.2 Photocells in OPENING

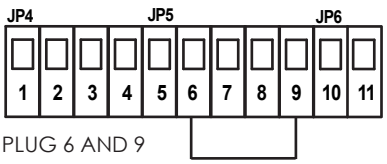
Feed the photocells through **7-8-9**, terminal **JP5**.
Wire the photocell contact (N.C. contact) to **6-7**, terminal **JP5**.
An additional photocell set can be wired in SERIES (N.C. contact).

- If the photocell beam is broken during OPENING, the gate **stops temporarily**.
- When the photocell beam is free, the gate **goes to normal operation.**



The PHOTOCELLS IN OPENING are important for the safety of people and objects.

N.B.: To desable the photocell in opening during installation, **plug 6 and 9 together**.



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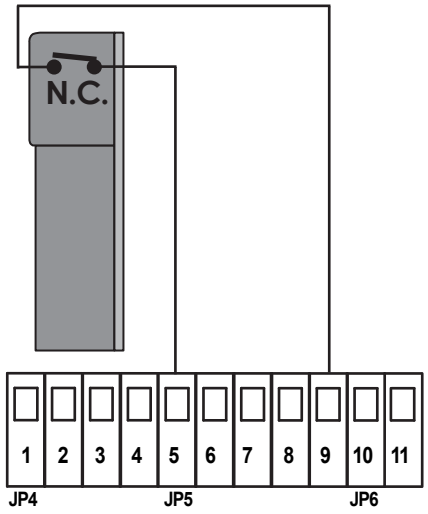
3.7 SAFETY EDGE

3.7.1 Mechanical safety edge in CLOSING

Wire the safety edge to **5-9**, terminal **JP5**.

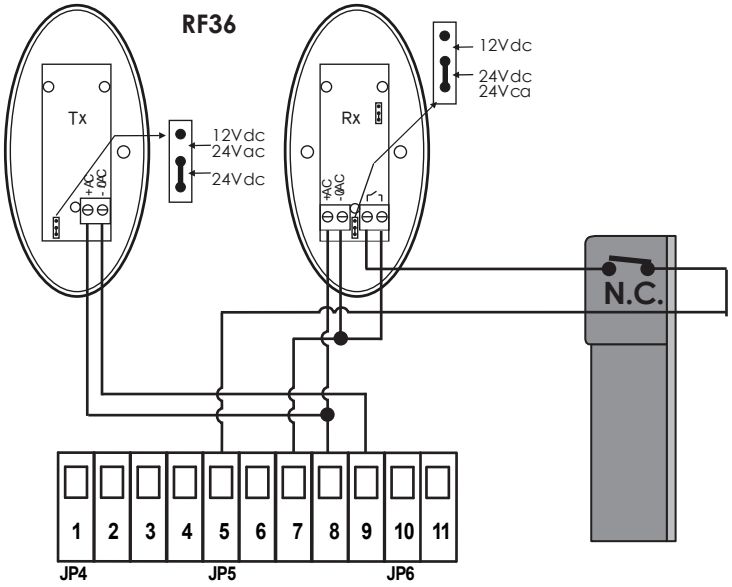
- If the contact is broken during **CLOSING**, the gate stops and reverses.
- If the contact is broken during **OPENING**, the gate keeps on working normally



Mechanical safety edge + photocells in CLOSING

Wire the safety edge and the N.C. contact of the photocell in series.

- If the contact is broken during **CLOSING**, the gate stops and reverses.
- If the contact is broken during **OPENING**, the gate keeps on working normally

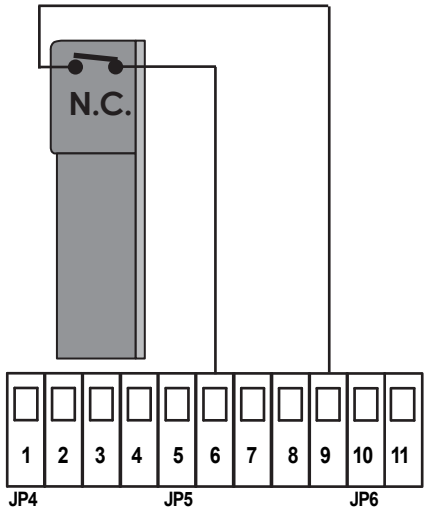


3.7.2 Mechanical safety edge in OPENING

Wire the safety edge to **6-9**, terminal **JP5**.

- If the contact is broken during **OPENING**, the gate stops and reverses after 3 sec.
- If the beam is broken during **CLOSING**, the gate stops and reverses.

N.B.: Attention!
Proceed to set **SW2 dip-switch no. 2 = ON.**

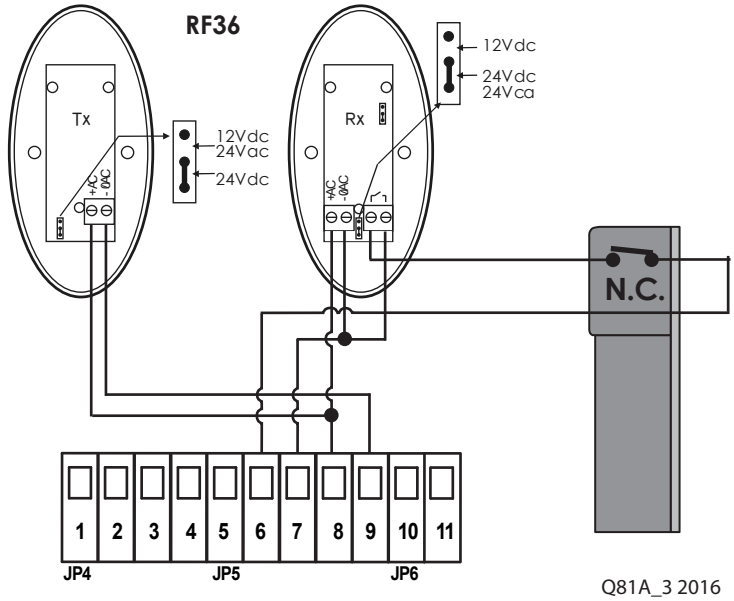


Mechanical safety edge + photocells in OPENING

Wire the safety edge and the N.C. contact of the photocell in series.

- If the beam is broken during **OPENING**, the gate stops until the obstacle is removed and then starts opening again.
- If the beam is broken during **CLOSING**, the gate stops and reverses.

N.B.: Attention!
Adjust **SW2 dip-switch no. 2 = OFF**



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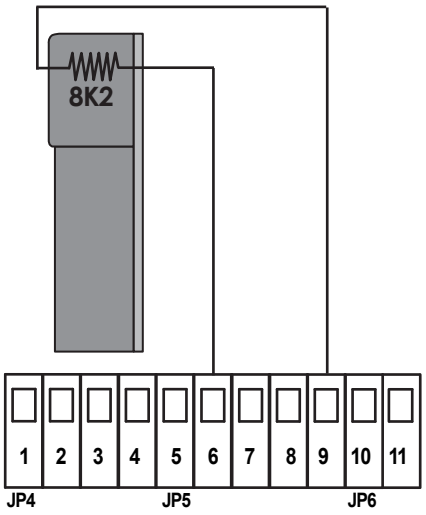
3.7.3 8K2 resistive safety edge in OPENING

- Adjust **SW2 dip-switch no. 2 = ON**
- Press **SET** + **SET TX** together and feed the control panel.

Wire the 8K2 safety edge to **6 - 9**, terminal **JP5**.

- If the contact is broken during **OPENING**, the gate stops and reverses after 3 sec.
- If the beam is broken during **CLOSING**, the gate stops and reverses.

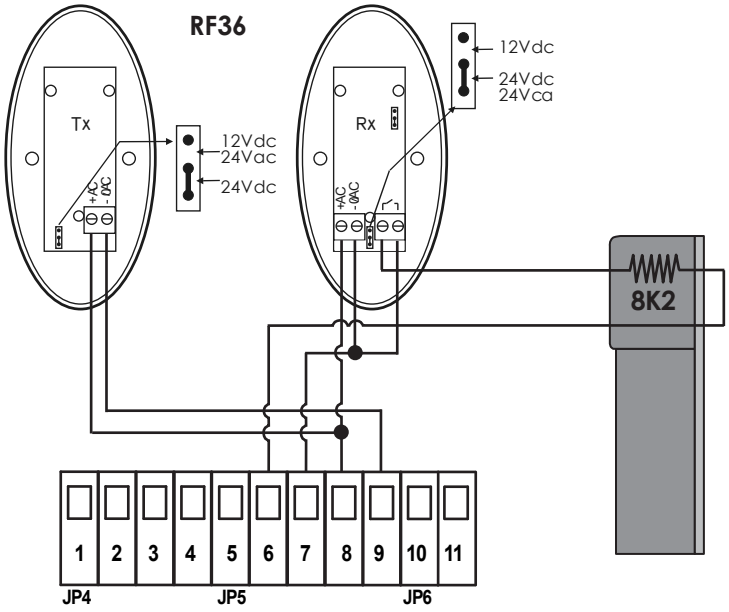


8K2 safety edge + photocells in OPENING

- Adjust **SW2 dip-switch no. 2 = ON**
- Press **SET** + **SET TX** together and feed the control panel.

Wire the safety edge and the N.C. contact of the photocell in series.

- If the contact is broken during **OPENING**, the gate stops and reverses after 3 sec.
- If the beam is broken during **CLOSING**, the gate stops and reverses.



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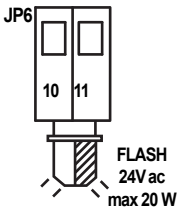
3.8 FLASHING LIGHT

Wire the flashing light (max 20W) to ***10 – 11***, terminal **JP6**.

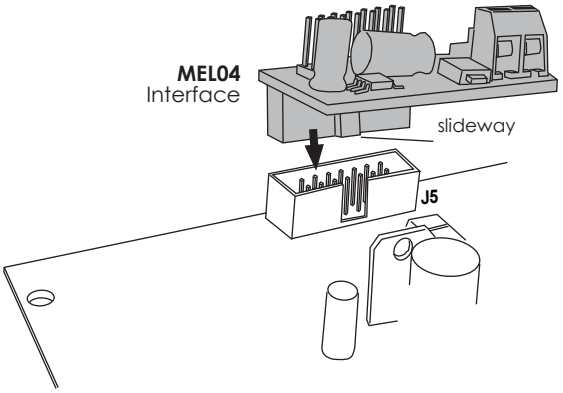
- QUICK blinking → OPEN
- SLOW blinking → CLOSE
- FIXED light on → PAUSE

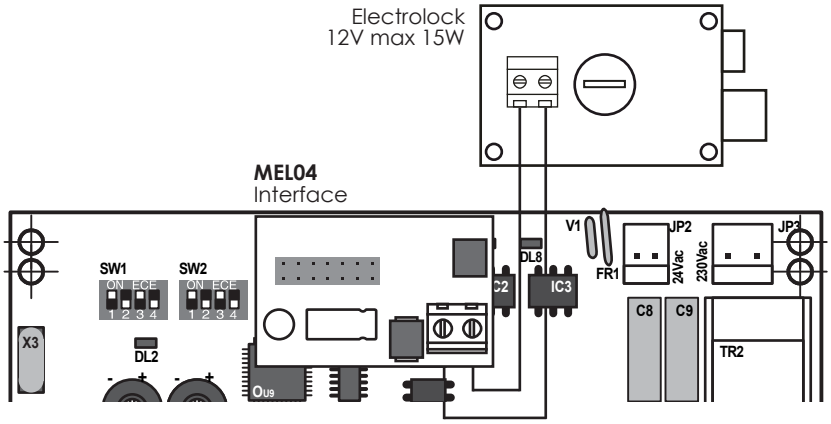


3.9 ELECTROLOCK

ATTENTION:
CUT THE POWER OFF BEFORE PLUGGING THE JACK

Plug the **MEL04** interface (optional) onto connector **J5**, respecting the slot orientation.
Wire the ELECTROLOCK to **MEL04**.



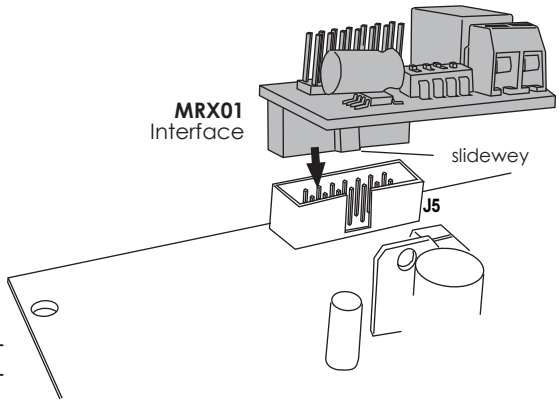


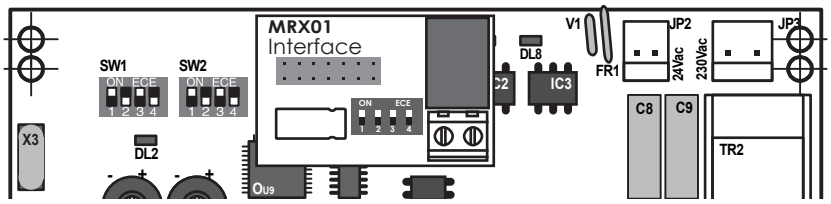
HOW TO PLUG THE 2nd RADIO CHANNEL INTERFACE

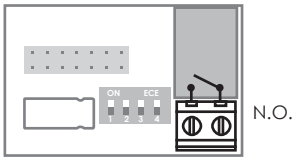
ATTENTION:
CUT THE POWER OFF BEFORE PLUGGING THE JACK

Plug the **MRX01** jack (optional) onto connector **J5**, respecting the slot orientation.

Before setting the dip-switch **SW1**, make sure the power is off.







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3.10.1 Auxiliary radio channel AUX

To use the **MRX01** interface as second radio channel, proceed this way:

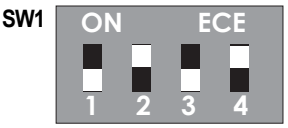
ATTENTION:
Quite siempre la tensión antes de cambiar la posición de los Dip-switch

MONOSTABLE COMMAND
The contact ACTIVATES when giving a start command by the remote control.
If you wish to choose this function mode, select the switches as follows:

1 = ON **2 = OFF** **3 = OFF** **4 = NO EFFECT**

BISTABLE COMMAND
The contact ACTIVATES or DESACTIVATES every time you press the remote control.
If you wish to choose this function mode, select the switches as follows:

P1 = OFF **2 = ON** **3 = OFF** **4 = NO EFFECT**



TIMED COMMAND
IThe contact ACTIVATES when giving a start command by the remote control and stays for 90 seconds.
If you wish to choose this function mode, select the switches as follows:

1 = ON **2 = ON** **3 = OFF** **4 = NO EFFECT**

3.10.2 Signalling LIGHT

The contact ACTIVATES at OPENING and DESACTIVATES only at FINAL CLOSING POSITION.
If you wish to choose this function mode, select the switches as follows:

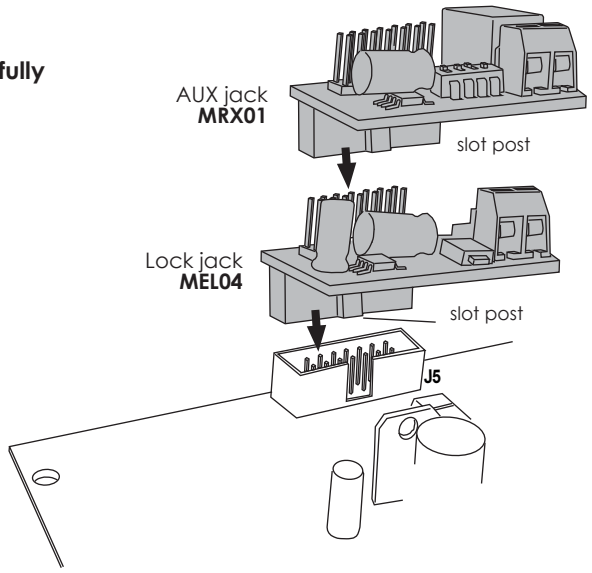
1 = OFF **2 = OFF** **3 = ON** **4 = NO EFFECT**

3.10.3 Courtesy LIGHT

The contact ACTIVATES at OPENING and DESACTIVATES after 90 from complete duty cycle.
If you wish to choose this function mode, select the switches as follows:

1 = ON **2 = OFF** **3 = ON** **4 = NO EFFECT**

Nota:
The control panel can connect a maximum of 2 jacks at once.
Plug the jacks one onto the other as shown in the picture, carefully following the slot post.



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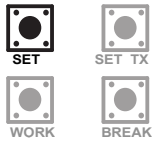
4. DEFAULT SETTINGS

LThe control panel is supplied with a **DEFAULT SETTINGS**: working time and delay are set for a standard 90° opening.

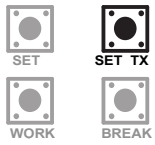
To reload the DEFAULT SETTINGS:
- Press **BREAK** to cut the power OFF and ON
- Turn SENS to the maximum (+) and **POWER** to half position.

5. BROWSING THE MENU



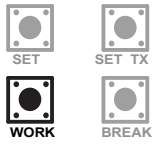
SET

Use **SET**:
- To programm the control panel (section **8.1.** AUTOMATIC MODE – **8.2.** SEQUENTIAL MODE).
- To activate or desactivate the automatic closing (section **5.1.1**)



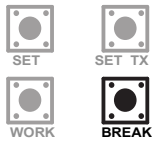
SET TX

Use **SET TX**:
- To store or to delete a radio code.



WORK

Use **WORK**:
- As START command
- For SEQUENTIAL PROGRAMMING



TASTO **BREAK**

Use **BREAK**:
- To activate and set the AUTOMATIC CLOSING TIME (section **5.1.1**)

5.1 FUNCTIONS MENU

5.1.1 AUTOMATIC CLOSING

The **AUTOMATIC CLOSING DEFAULT** is set at 3 sec.

To set the AUTOMATIC CLOSING TIME:
- Press **SET** for 3 sec. **DL1** blinks, release **SET**.
- Press **BREAK** and release.
- The blinker and led **DL1** light up, the control panel starts the count down.
- Press B**REAK** again when reached the desired time, the blinker turns off.
  The time has been set (automatic closing time max. 120 sec.)

To desactivate the **AUTOMATIC CLOSING**:
- Press **SET** for 3 sec. and release, the led **DL1** blinks.
- Press **BREAK** and hold for 5 sec., the **AUTOMATIC CLOSING** has been desactivated

5.1.2 8K2 RESISTIVE SAFETY EDGE INPUT (just in opening)

To activate the **8K2** input as safety in opening press **SET + SET TX** while turning the control panel on.

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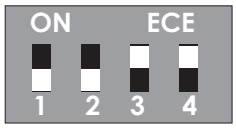
6. OPERATION MODE

Choose the operation mode you wish selecting the switches SW1 – SW2.
The control panel is supplied with the following default settings:

SW1



SW2

SOFT START
MOTOR TEST } **ACTIVATED**
PHOTOCELL TEST

How to read switch position:

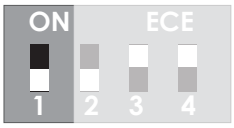
WHITE switch **DOWNWARD =** Function **OFF**

WHITE switch **UPWARD =** Function **ON**

ATTENTION:Turn the power off before setting the switches

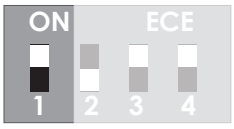
SWITCH SW1

dip n° 1



ON

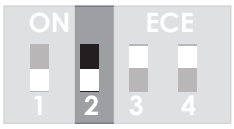
OFF = Double-leaf gate mode



ON = Single-leaf gate mode

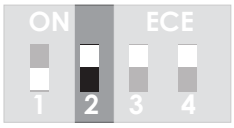
OFF

dip n° 2



ON

OFF = **Multi-occupation mode DEACTIVATE**D

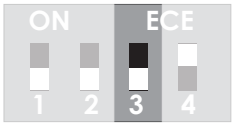


ON = **Multi-occupation mode ACTIVATED**

OFF

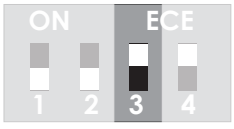
This function gives priority to the first open command. The control unit won't accept additional START commands during OPENING and AUTOMATIC CLOSING COUNT DOWN.

dip n° 3



ON

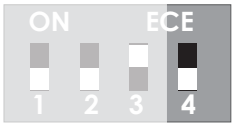
OFF = **Soft start mode DEACTIVATED**
At opening motors work at the set thrust **(POWER)**



ON = **Soft start mode ACTIVATED**
At opening motors perform at maximum thrust for 1,5 sec., to continue after at the set thrust.

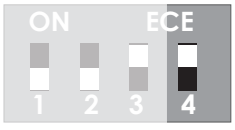
OFF

dip n° 4



ON

OFF = **Motor and photocell TEST DEACTIVATED**



ON = **Motor and photocell TEST ACTIVATED**

OFF

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SWITCH SW2

dip n° 1

ON

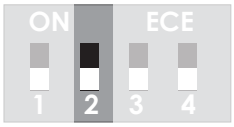
OFF = **Ram blow and closing thrust DEACTIVATED**

ON = **Ram blow and closing thrust ACTIVATED** (just for gates with electrolock)

OFF

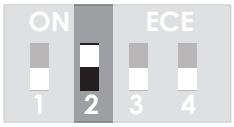
---

dip n° 2



ON

OFF = **Photocell in OPENING ACTIVATED**

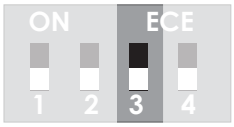


ON = **Mechanical safety edge ACTIVATED**
8K2 resistive safety edge ACTIVATED.
N.B.: It's mandatory to carry out the INPUT TEST

OFF

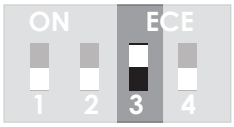
---

dip n° 3



ON

OFF = **Immediate closing mode DEACTIVATED**

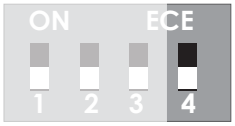


ON = **Immediate closing mode ACTIVATED**
The gate starts CLOSING after 1,5 sec.
bypassing the AUTOMATIC CLOSING COUNT DOWN

OFF

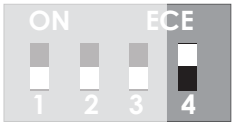
---

dip n° 4



ON

OFF = **Ram stroke RELEASE mode DEACTIVATED**



ON = **Ram stroke RELEASE mode ACTIVATED**
At the endpoint stage during CLOSING and OPENING, the motors press onto the mechanical endstop, cut the thrust, and release a small space between the doors for safety operation.

OFF

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7. RADIO CODES

The control panel DOESN'T ALLOW TO STORE any remote control if SAFETY DEVICES are DISCONNECTED.

Make sure input no. **2 STOP (DL5)**, input no. **5 photocell in OPENING (DL7)** and input no. **6 photocell in CLOSING (DL8)** are connected.

Led OFF = input **DEACTIVATED**
Led ON = input **ACTIVED**

If one or more safety devices are not wired, proceed to TEMPORARY DISCONNECTION, see section **3.5 / 3.6.**

The control panel has been designed to operate with fixed code or rolling-code remote controls.
Choose the remote control you wish to store carefully: once the remote control has been saved and memorized, the control panel shall only recognize that kind of radio code without possibility of reset.

Before starting proceed to delete all existing radio codes.

7.1 DELETING EXISTING RADIO CODES

- Press **SET-TX** and keep pressed for 10 seconds (**DL1** blinks).
- **DL1** turns off. **All codes have been deleted.**

7.2 LOADING A REMOTE CONTROL AS START COMMAND

- Press **SET-TX** once: **DL1** blinks (1 blink – stop – 1 blink ….)
- Load within 5 sec. the remote control you wish to store.

The control panel has stored the radio code and goes out the programming automatically.
You can store a maximum of 32 different radio codes (Start + Pedestrian + 2° radio channel)

7.3 LOADING A REMOTE CONTROL AS PEDESTRIAN COMMAND

- Press **SET-TX** twice. **DL1** blinks (2 blinks – stop – 2 blinks ….)
- Load within 5 sec. the remote control you wish to store.

The control panel has stored the radio code and goes out the programming automatically.

7.4 LOADING A REMOTE CONTROL AS 2° RADIO CHANNEL COMMAND (MRX01 jack)

- Press **SET-TX** three times. **DL2** blinks (3 blinks – stop – 3 blinks ….)
- Load within 5 sec. the remote control you wish to store.

The control panel has stored the radio code and goes out the programming automatically.

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8. PROGRAMMING

The control panel is supplied with a **SEQUENTIAL PROGRAMMING DEFAULT** (obstacle detection excluded)

8.1 AUTOMATIC mode

8.1.1 AUTOMATIC mode with OBSTACLE DETECTION for double-leaf gates

ATTENTION!:
Before proceeding to programming, start a functional cycle test to proof the motors' thrust.
The thrust has to be proper to the gate weight no matters if light or heavy gates.
If adjustments are needed, regulate POWER so that the gate doesn't stop opposing a light contrast pressure.

- **Start programming with cool operators.**
- **The AUTOMATIC MODE PROGRAMMING can only perform if mechanical ground endstops are fitted, in Opening and Closing.**

- Gate in **CLOSING POSITION**.
- **SENS** in half position.
- If during programming the gates stop before reaching the ground endstops, turn **SENS** (sensitivity) clockwise (to +).
- Press SET and keep pressed for 10 sec., **DL1** starts blinking.
- When motors start working release **SET**.
- Motors run firstly a short **OPENING** for 4 sec., **M1 first** and **M2 after** (delayed leaf), then **CLOSE** until the ground mechanical endstop in closing.
- At this stage the gate performs an **OPENING RUN** until fully open and a **CLOSING RUN** until fully close.
- When the procedure is finished, all time settings are saved. The control panel is now ready for normal operation.

ATTENTION!:
Check the proper GATE OPERATION SENSITIVITY.
If adjustments are needed, turn SENS clockwise (to +) and regulate accordingly.
The sensitivity has to be proper in order to prevent uncorrect operation

OBSTACLE DETECTION OPERATION

- If an obstacle is detected in opening, **the gate stops and reverses for 10 cm.**
- The gate **starts closing automatically after 30 sec**., and this will be for 3 attempts. If the area still remains unclear the gate stays open.
- If an obstacle is detected during slow down, **the gate simply stops**.
- If an obstacle is detected in closing, **the gate stops and reverses till fully open**.
- The gate **starts closing automatically after 30 sec.**, and this will be for 3 attempts. If the area still remains unclear the gate stays open.
- If an obstacle is detected during slow down, **the gate simply stops**.
- If power cut occurs, **the first START cycle will perform without obstacle detection** just to restore properly the standard operation of the gate.

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8.1.2 AUTOMATIC mode with OBSTACLE DETECTION for single-leaf gates

ATTENTION!:
The motor has to be wired to M1 input (orange terminal JP7, blocks 12 – 13 – 14)

- Switch **SW1**, dip no. **1 = ON**.
- Gate in **CLOSING** position.
- **SENS** in half position.
- If during programming the gates stop before reaching the ground endstops, turn **SENS** (sensitivity) clockwise (to +).
- Press **SET** and keep pressed for 10 sec., **DL1** starts blinking.
- When motor starts working release **SET**.
- Motor runs firstly a short **OPENING** for 4 sec., **M1** first and **M2** after (delayed leaf), then **CLOSE** until the ground mechanical endstop in closing.
- At this stage the gate performs an **OPENING RUN** until fully open and a **CLOSING RUN** until fully close.
- When the procedure is finished, all time settings are saved. The control panel is now ready for normal operation.

ATTENTION!:
Check the proper GATE OPERATION SENSITIVITY.
If adjustments are needed, turn SENS clockwise (to +) and regulate accordingly.
The sensitivity has to be proper in order to prevent uncorrect operation.

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8.2 SEQUENTIAL MODE

8.2.1 SEQUENTIAL mode WITHOUT Obstacle Detection for double-leaf gates

ATTENTION!
Before proceeding to programming, start a functional cycle test to proof the motors' thrust.
he thrust has to be proper to the gate weight no matters if light or heavy gates.
If adjustments are needed, regulate POWER so that the gate doesn't stop opposing a light contrast pressure.

- **Start programming with cool operators.**
- **The AUTOMATIC MODE PROGRAMMING can only perform if mechanical ground endstops are fitted, in Opening and Closing.**

- **SENS** in maximum position (to +)
- Programming can be carried out both **with the remote control or WORK button**.
- Press **TEST** for 3 sec., **DL1** starts blinking, release.
- Press the button of the remote control previously loaded. **M1** motor **STARTS OPENING**.
- At 80% of opening press the remote control to start **SLOW DOWN**.
- When fully open let the motor run for 3/4 sec., then press the remote control again.
- Now **M1 settings are LOADED**.
- Press the remote control, the control panel starts counting the **DELAY TIME in opening** (max. 20 sec.)
- Press the remote control again to set the desired delay time (standard operation 2/3 sec.)
- Now the **DELAY TIME** in opening is loaded. **M2 motor STARTS OPENING**.
- At 80% of opening press the remote control to start SLOW DOWN.
- When fully open let the motor run for 3/4 sec., then press the remote control.
- Now **M2 settings are LOADED**.
- Press the remote control, **M2 motor STARTS CLOSING**.
- Press the remote control, the control panel starts counting the **DELAY TIME in closing** (max. 20 sec.)
- Press the remote control again to set the desired delay time (standard operation 2/3 sec.)
- **Now M1 motor starts automatically closing**.
- Let gates complete the closing run.
- When the procedure is finished, all time settings are saved.
  The control panel is now ready for normal operation

Check the good operation of the gate. If time settings need to be adjusted go back to programming and repeat the whole programming procedure.

8.2.2 SEQUENTIAL mode WITHOUT Obstacle Detection for single-leaf gates

- **SENS** in maximum position (to +)
- Programming can be carried out both **with the remote control or WORK button**.
- Press **TEST** for 3 sec., **DL1** starts blinking, release.
- Press the button of the remote control previously loaded. **M1 motor STARTS OPENING**.
- At 80% of opening press the remote control to start **SLOW DOWN**.
- When fully open let the motor run for 3/4 sec., then press the remote control again.
- Now **M1 settings are LOADED** and the motor **starts CLOSING**.
- Let gate completes the closing run.
- When the procedure is finished, all time settings are saved.
  The control panel is now ready for normal operation

Check the good operation of the gate.
If time settings need to be adjusted go back to programming and repeat the whole programming procedure.

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9. TROUBLE SHOOTING – ERROR MESSAGES

The control panel is designed to display errors through a LED lighting system.
Here below the trouble shooting table.

Led	ERROR	POSSIBLE CAUSE	SOLUTION
DL1 + blinker	2 blinks stop 2 blinks	• **Photocell test**	Check the wiring and operation of the photocell.
	3 blinks stop 3 blinks	• **Motor test**	Check the wiring and operation of the motors.
	OFF	• Power supply disconnected	Check the connection to the power supply
DL4	ON	• Permanent **START** command	Check the operation of the ACCESSORIES wired to the START (N.O. contact)
DL5	OFF	• STOP button disconnected	Check the wiring otherwise deactivate the input (see section **3.5**)
		• Incorrect electric wiring	Check the wiring diagram (see section **3.5**)
DL7	OFF	• Photocell in closing non-aligned	Check the photocell alignment
		• Obstacle detected between the photocells	Check and remove the obstacle
		• Incorrect electric wiring	Check the wiring diagram
		• Disconnected photocell	Check the power connection
		• Disconnected photocell, active input	Disable the photocell input (see section **3.6**)
DL8	OFF	• Photocell in opening non-aligned	Check the photocell alignment
		• Obstacle detected between the photocells	Check and remove the obstacle
		• Incorrect electric wiring	Check the wiring diagram
		• Disconnected photocell	Check the power connection
		• Disconnected photocell, active input	Disable the photocell input (see section **3.6**)
DL6	ON	• Permanent PEDESTRIAN command	Check the operation of the ACCESSORIES wired to the PEDESTRIAN START (N.O. contact)