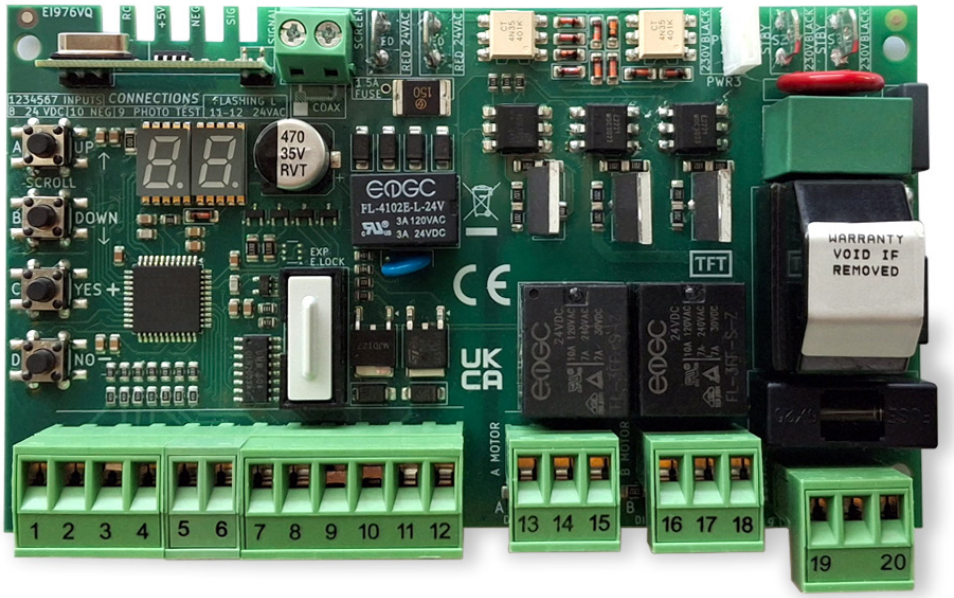
CONTROL UNIT FOR SWING GATES

230V

PROTECO GATE AUTOMATIONS

Installation and User manual

English



Q60AB

Control unit for single and double-leaf gates - 230V ac

- Integrated LED display for programming and fault diagnostics.
- Advanced programming with manual adjustment of individual parameters.
- Electronic adjustment of forces, work time and slowdown, separate for each motor.
- Adjustable leaf delay time.
- Single leaf function for single gates.
- Adjustable pedestrian opening.
- Multi-occupation function with priority to opening.
- Automatic, semi-automatic, and step-by-step closing.
- Motor and photocell test function.
- Electric-lock optional card with “reversing stroke” and “lock pulse” functions.
- Plug-in terminal blocks.
- Input for timer function.
- Built-in 433.92MHz radio receiver
- 99 radio codes memory

TECHNICAL FEATURES

Item code	PQ60AB1
Pcb dimensions	136 x75 x 35 mm
Weight	160 g
Main power supply voltage	230V ~ 50-60Hz
Power supply voltage tolerance	-10% +20%
Transformer	230/21Vac – 15VA
Main fuse	5 A
Rated power	MAX 600W (each motor)
Maximum power consumption	3,5 A
Stand-by power consumption	30 mA
Flashing light power supply	24Vac, max 20 W
Accessories power supply	24 Vdc , max 5 W
Electric-lock power supply	12Vdc, max 15 W
Operating temperature	-20 +50 °C
Protection level (boxed)	IP55

Index

English

1. WARNINGS AND INSTALLATION TIPS

WARNING:

This manual contains important safety information.
Improper installation or misuse can cause serious harm to people and objects.

Please read these instructions carefully, paying particular attention to the sections marked with the symbol ⚠ .

Keep this manual in a safe and sheltered place for future reference.

⚠ **Do not allow children to play with the equipment or fixed control devices. Keep remote controls out of reach of children.**

⚠ **Always disconnect the electrical power before making any type of connection or intervention on the control unit.**

⚠ **Always connect the earth cable.**

The connection, programming, and commissioning of the control unit must be carried out by qualified and experienced personnel, fully complying with the laws, regulations, and standards, with particular attention to the requirements specified by the EN 12453 standard.

This device is designed to be used exclusively with the power supply unit (transformer) provided.

A disconnect device must be incorporated into the wiring in accordance with the wiring diagram and instructions (refer to paragraph 3).

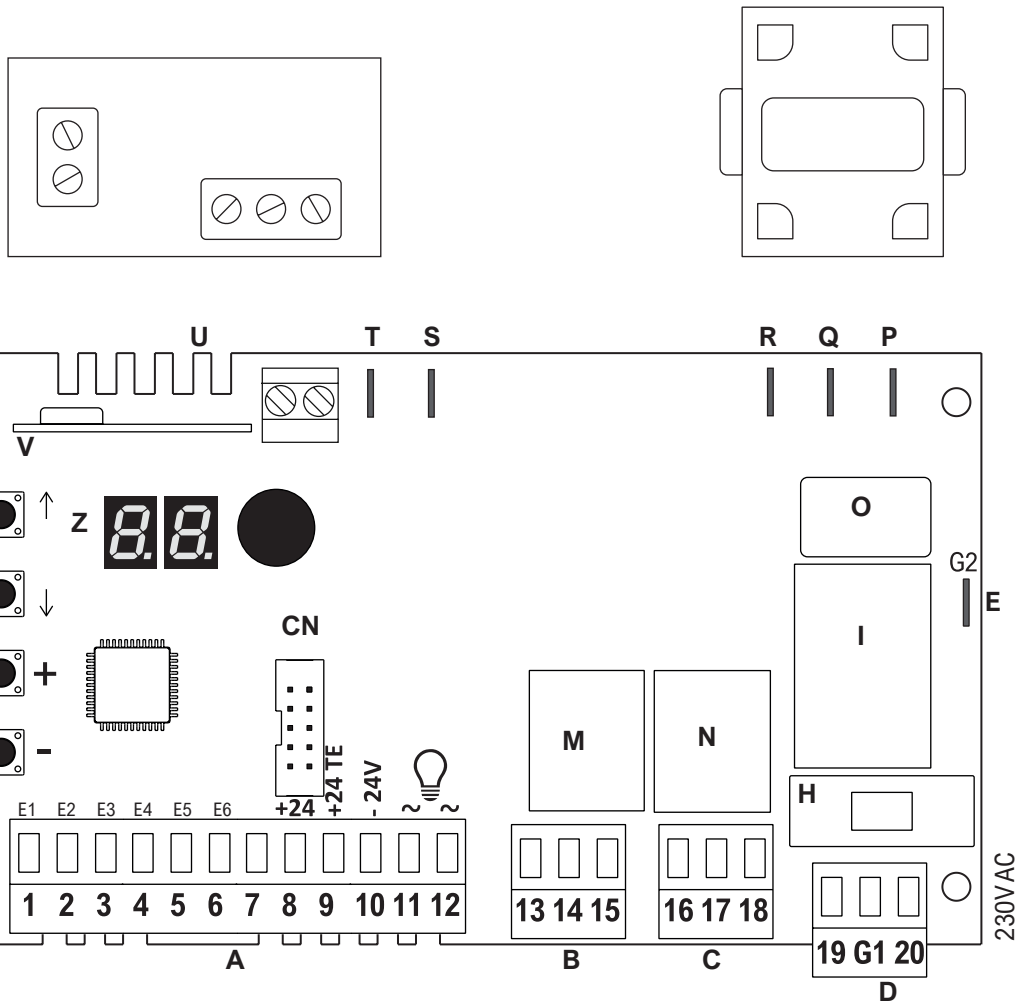
In case of dead man command, make sure the area is free and clear.

Regularly inspect the installation and check for any signs of wear or damage in the cables.
If maintenance or repair is necessary, do not use the device until the correct functioning of the system has been restored.

The control unit is designed to manage single and double-leaf gates.

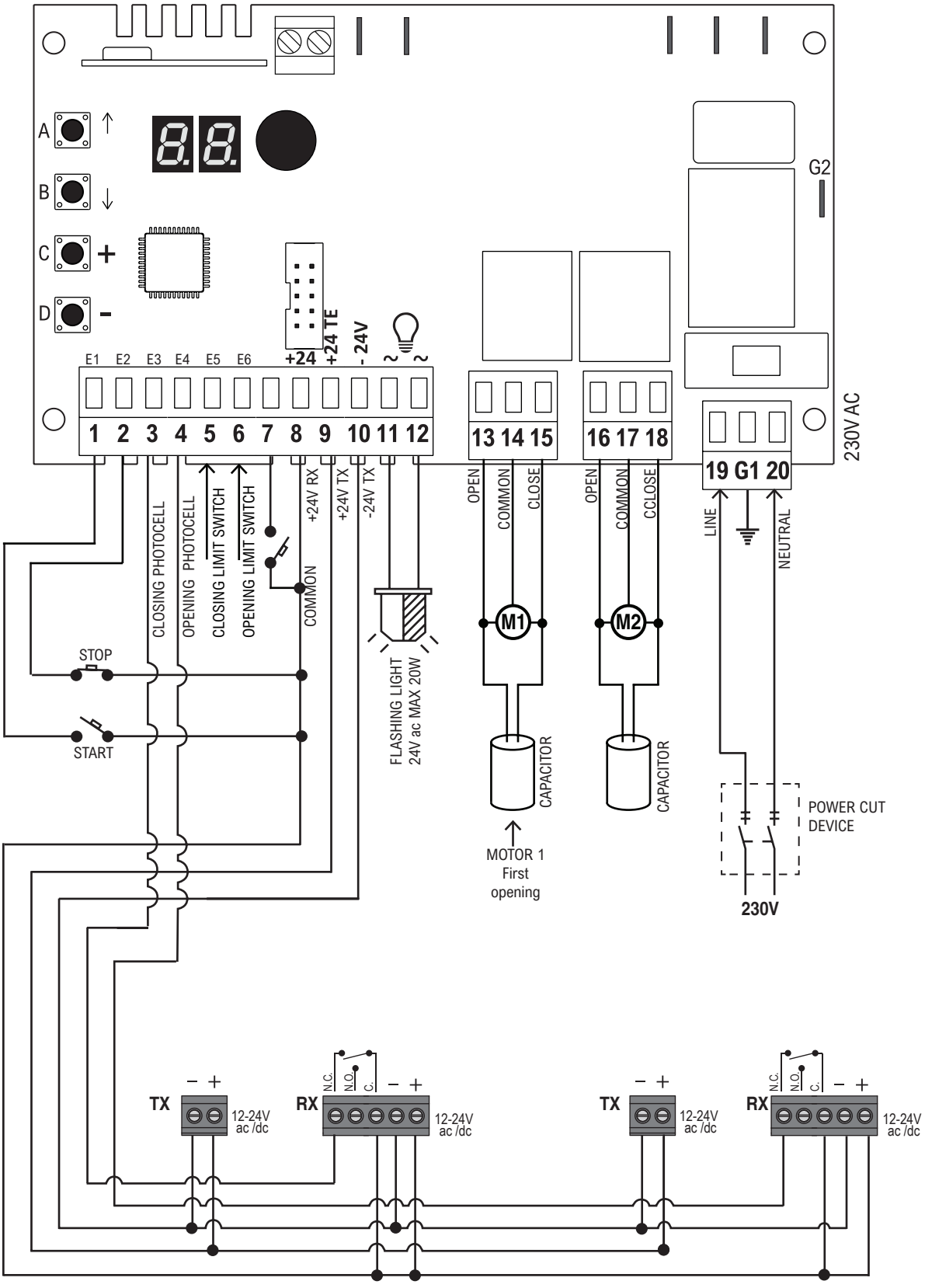
In case of single-leaf gates, pay particular attention to the paragraphs marked with the symbol:

2. WIRING DIAGRAM and COMPONENTS



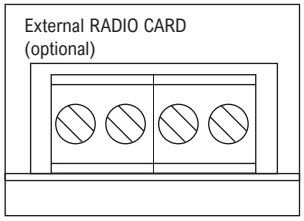
A	Terminal block A
B	Terminal block B
C	Termnial block C
G	Termnial block D
E	Faston earth connector
H	5A fuse
I	Common mode filter
CN	Electric lock module slot
M	Relay motor 2
N	Relay motor 1
O	Condensatore classe X1
P	Transformer/Power source plug
Q	Transformer/Power source plug
R	Standby power source plug
S	24VAC
T	24VAC
U	External radio card connector
V	Built-in radio circuit board
Z	Display

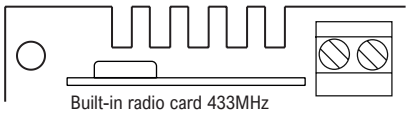
3. WIRINGS


A
B
C
D
+
-
G2
E1 E2 E3 E4 E5 E6 +24 +24 TE - 24V
1 2 3 4 5 6 7 8 9 10 11 12
13 14 15
16 17 18
19 G1 20
230V AC
CLOSING PHOTOCELL
OPENING PHOTOCELL
CLOSING LIMIT SWITCH
OPENING LIMIT SWITCH
COMMON
+24V RX
+24V TX
-24V TX
OPEN
COMMON
CLOSE
OPEN
COMMON
CCLOSE
LINE
NEUTRAL
STOP
START
FLASHING LIGHT
24V ac MAX 20W
M1
M2
CAPACITOR
CAPACITOR
MOTOR 1
First
opening
POWER CUT
DEVICE
230V
TX
RX
12-24V
ac /dc
N.C.
N.O.
C.

English

RADIO

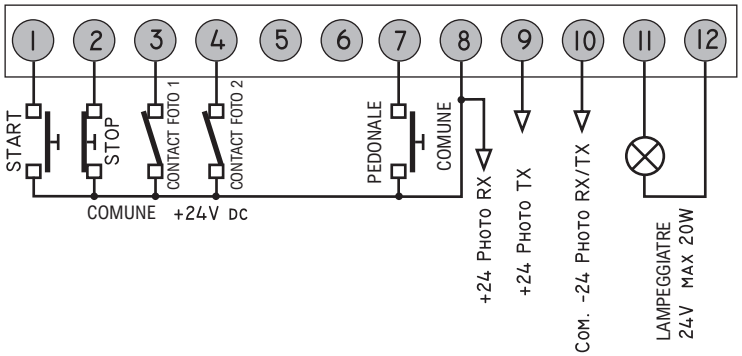




Terminal block A = START command / POWER SUPPLY input / PHOTTOCELLS and FLASHING LIGHT

1 START input (N.O.)
2 STOP input (N.C.)
3 CLOSING PHOTOCELL / SAFETY EDGE (N.C. contact / 8K2)
4 OPENING PHOTOCELL / SAFEY EDGE (N.C. contact / 8K2)
7 PEDESTRIAN START commande (N.O.)
8 COMMON / +24V PHOTO RX
9 + 24V PHOTO TX
10 COMMON / -24V PHOTO RX/TX
11 } FLASHING LIGHT power output 24v ac -Max200w
12 }

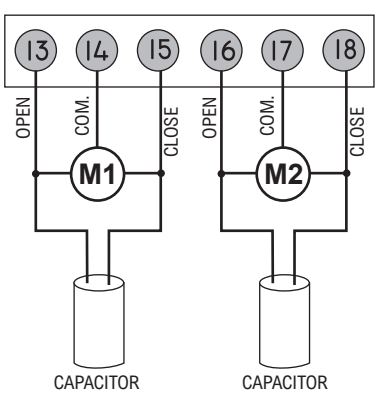
TERMINAL BLOCK A



Terminal block B/C = MOTORS **(M1/M2)**

13 OPEN
14 COMMON } MOTOR **M1**
15 CLOSE
16 OPEN
17 COMMON } MOTOR **M2**
18 CLOSE

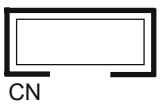
TERMINAL BLOCK B/C



Terminal block D = MAIN LINE 230V

Make sure the electrical circuit is equipped with a disconnect device wired to the control panel.

ELECTRIC LOCK PLUG

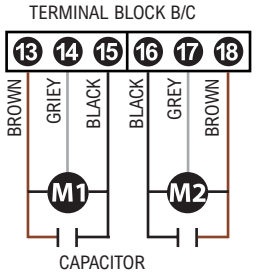
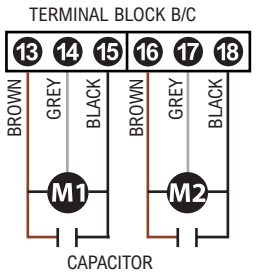
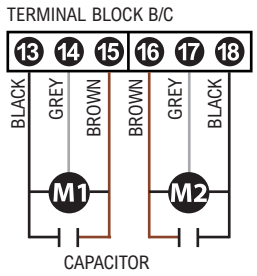
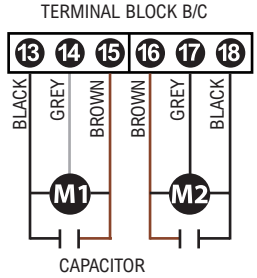
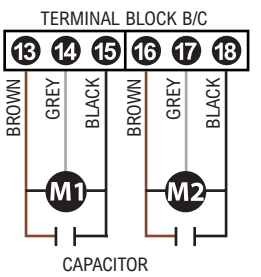
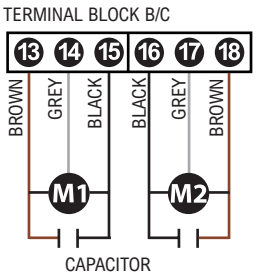
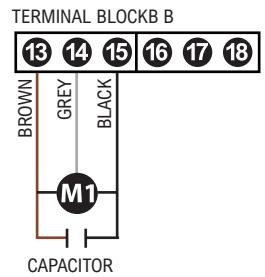
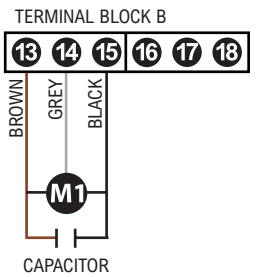
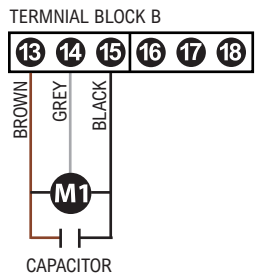
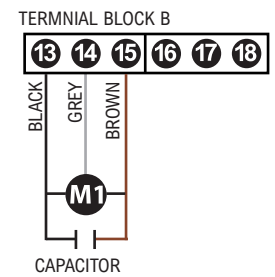
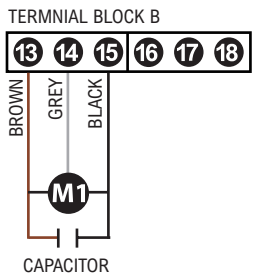
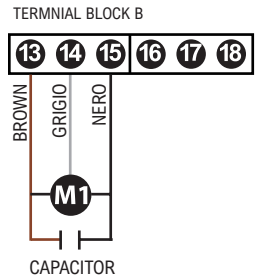


3. MOTORS

M1 motor 1 Leaf that opens first and **closes last**
M2 motor 2 Leaf that opens second and **closes first**

Wire motor 1 **M1** to terminals 13-14-15 terminal **block B**
Wire motor 2 **M2** to terminals 16-17-18 terminal **block C**

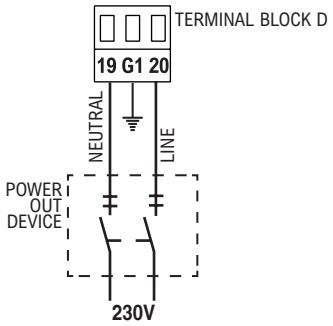
In case of single-leaf gate, wire the motor to terminals 13-14-15 **terminal block B**

GATE VIEW	AUTOMATION TYPE TRADITIONAL RAM ARTICULATED ARM MOTOR	LINEAR RAM WHEEL MOTOR	UNDERGROUND MOTOR
LH leaf 1st (M1)			
RH leaf 2nd (M1)			
LH single leaf (M1)			
RH single leaf (M1)			

English

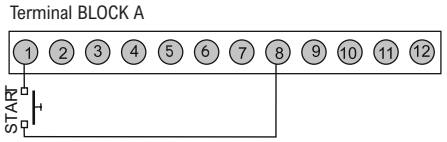
3.2 MAINS wiring

The power line must be protected by a suitably rated **POWER CUT DEVICE**.
CConnect the 230V power line to terminals **19-20** of **terminal block D**, respecting polarity.
(19 NEUTRAL - 20 LINE).



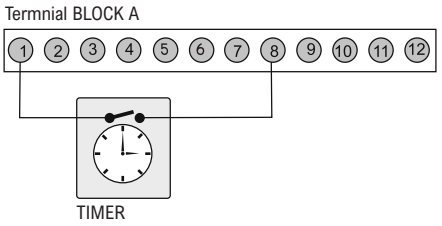
3.3 START contacts

Wire any START contact (N.O.) to terminals **1-8**, terminal **block A**.
An additional START contact can be wired in **PARALLEL** (N.O. contact).



3.3.1 TIMER as permanent START contact

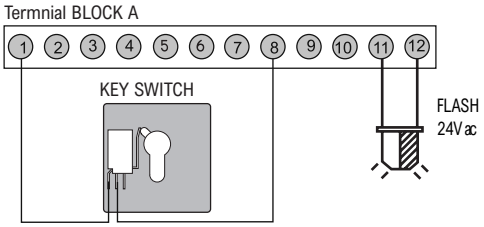
Wire the TIMER (N.O. contact) to terminals 1-8, terminal block A.



WARNING!:
USING THE TIMER IT IS MANDATORY TO ACTIVATE THE MULTI-OCCUPATION FUNCTION

3.3.2 KEY SWITCH

Wire the KEY SWITCH as START command (N.O. contact) to terminals 1-8,
terminal **block A**.



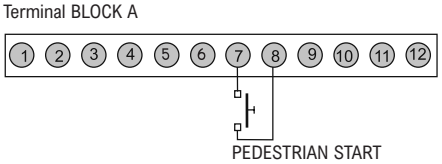
3.3.3 FLASHING LIGHT

Wire the FLASHING LIGHT (max 20W) to terminals 11 - 12 terminal block A.

- FAST flashing → OPENING
- SLOW flashing → CLOSING
- Flashing light ON still → PAUSE

3.4 PEDESTRIAN Opening

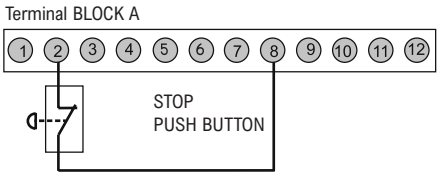
Wire the **PEDESTRIAN OPENING** contact (N.O.) to terminals **7- 8**,
terminal **block A**.
Additional **PEDESTRIAN OPENING** contact can be wired in **PARALLEL** (N.O. contact)



3.5 STOP push button wiring

Wire the STOP push button (N.C. contact) to terminals **2-8**, terminal **block A**.
Additional STOP push buttons can be wired in **SERIES** (N.C. contact).

The connection of an emergency STOP button is essential for the safety of people and objects.



3.6 ELECTRIC LOCK wiring (MEL card)

TURN THE POWER OFF AND PLUG THE **MEL CARD** INTO **CN** CONNECTOR

- WIRE THE ELECTRIC LOCK
- ADJUST FUNCTIONS PO - P1 and tC on PA menu

To enable the electric lock output go to menu PA and set P1 = S1.
To manage electric lock please see also functions PO (REVERSING STROKE) e tC (LOCK PULSE) on menu PA.
You can also command the electrick by remote control(rA menu, EL function) or by input plug on terminal block (EE menu, parameters E1 or E7 function EL).

3.7 PHOTOCELLS

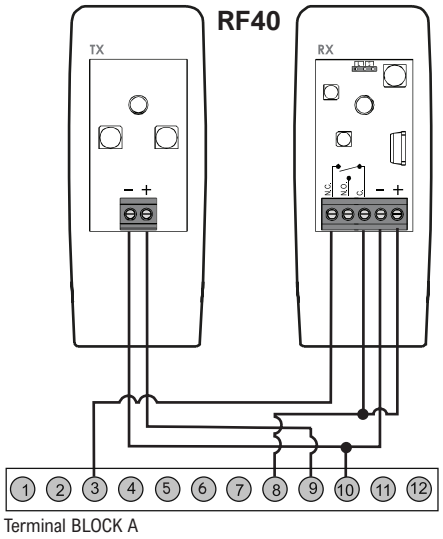
3.7.1 CLOSING photocell

Power the photocell through terminals **8 - 9 - 10**, terminal **block A**.
Wire the N.C. photocell contact to terminals **3 - 8**, terminal **block A**.
Additional PHOTOCELL can be wired in **SERIES** (N.C.).

- If the closing photocell beam is broken the gate **STOPS** and **REVERSES** after about 1,5 seconds
- If the opening photocell beam is broken the gate keeps on working normally.

For the safety of people and objects, it is important to install at least a CLOSING photocell set.

Note: To temporarily deactivate the closing photocell, during the installation procedure only, set E3 to “NO”.



Terminal BLOCK A

PHOTOCELL WIRING
8 = Power supply + PHOTO RX
9 = Power supply + PHOTO TX
10 = Power supply - COMMON PHOTO TX/RX
3 - 8 = Photocell contact

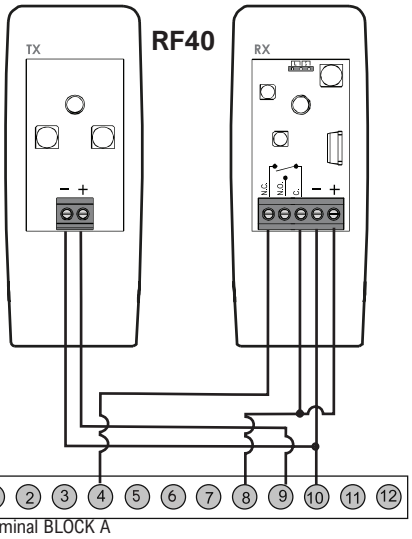
3.7.2 OPENING photocell

Power the photocell through terminals **8-9-10**, terminal **block A**.
Wire the N.C. photocell contact to terminals **4-8**, terminal **block A**.
Additional PHOTOCELL can be wired in **SERIES** (N.C.).

- If the opening photocell beam is broken the gate **STOPS temporarily**.
- As soon as the opening photocell beam is FREE, the gate **keeps on opening**.
- If the closing photocell beam is broken the gate STOPS and REVERSES after about 1,5 seconds.

For the safety of people and objects, it is important to install at least an OPENING photocell set.

Note: Set E4 = tA to enable output (default is off)



Terminal BLOCK A

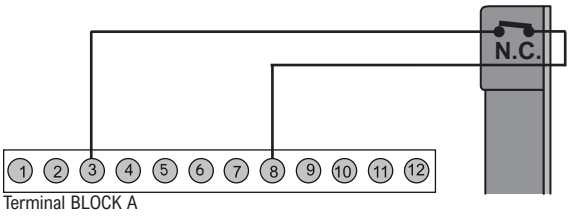
PHOTOCELL WIRING
8 = Power supply + PHOTO RX
9 = Power supply + PHOTO TX
10 = Power supply - COMMON PHOTO TX/RX
4 - 8 = Photocell contact

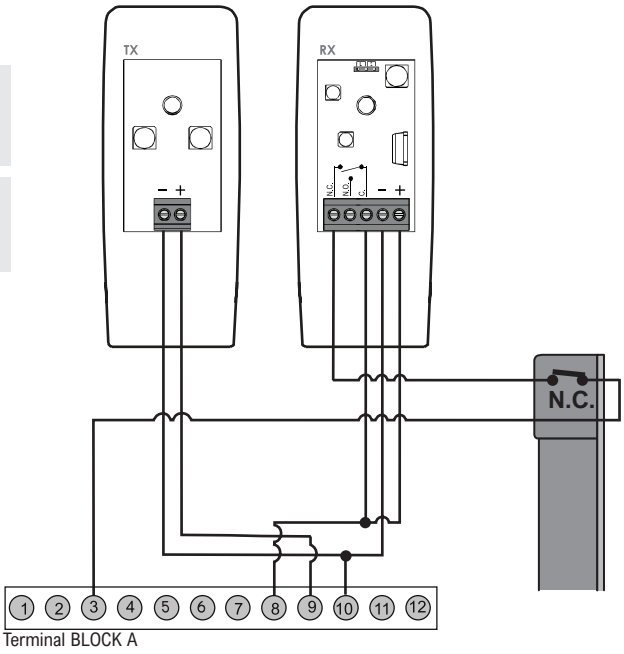
3.8 SAFETY EDGES

3.8.1 CLOSING SAFETY EDGE (mechanical)

Wire the SAFETY EDGE to terminals **3 - 8**, terminal **block A**.

- If the **CLOSING** safety edge is activated the gate **STOPS** and **REVERSES** after about 1,5 seconds.
- If the safety edge is activated during **OPENING** the gate keeps on working normally.





3.8.2 CLOSING SAFETY EDGE (resistive)

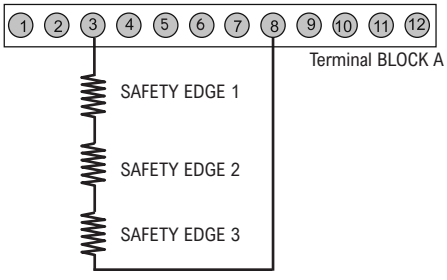
Wire the SAFETY EDGE to terminals **3 - 8**, terminal **block A**.

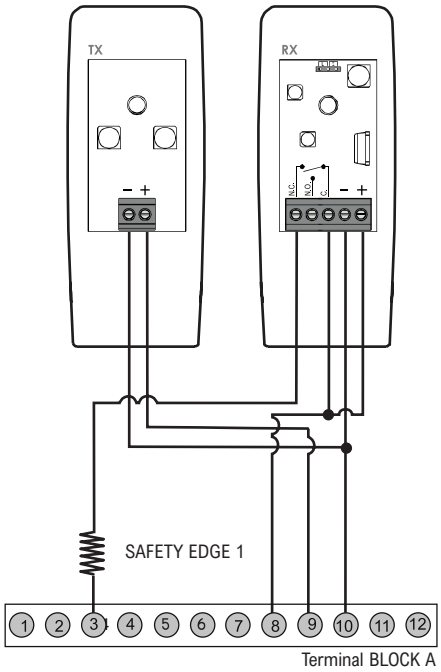
Set  as follows:

- 1 safety edge set to 1C
- 2 safety edges set to 2C
- 3 safety edges set to 3C

- If the **CLOSING** safety edge is activated the gate **STOPS** and **REVERSES** after about 1,5 seconds.
- If the safety edge is activated during **OPENING** the gate keeps on working normally.

The input can support up to a maximum of three 8K2 sensitive edges as per the diagram.





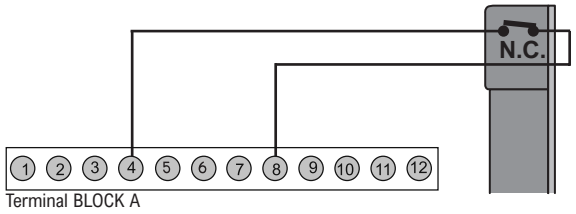
3.8.3 OPENING SAFETY EDGE (mechanical)

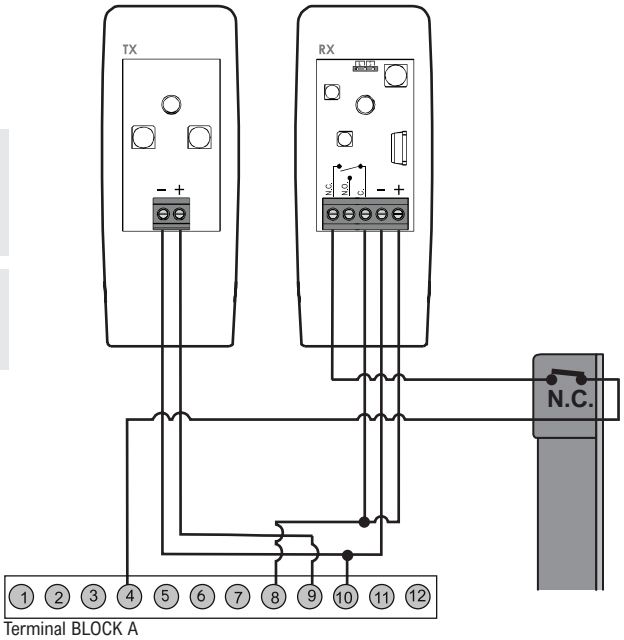
Wire the SAFETY EDGE to terminals n° **4 - 8** terminal **BLOCK A**.

Note: Set E4 = tC to enable input (default is OFF)

- If the OPENING safety edge is activated while the gate is **OPENING**, the gate **STOPS temporarily**.
- As soon as the contact is RELEASED, the gate **keeps on opening**.

- If the OPENING safety edge is activated during **CLOSING**, the gate **STOPS and REVERSES** after about 1,5 seconds.





3.8.4 OPENING SAFETY EDGE (resistive)

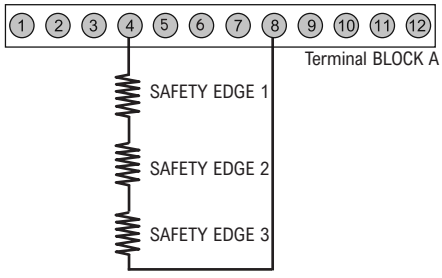
Wire the **SAFETY EDGE** to terminals n° **4 - 8** terminal **BLOCK A.**

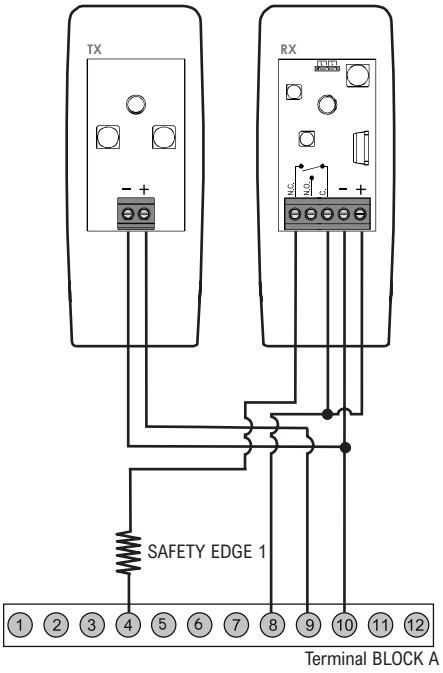
Note: Set E4 as follows:

- 1 safey edge set to 1o
- 2 safety edges set to 2o
- 3 safety edges set to 3o

- If the OPENING safety edge is activated while the gate is **OPENING**, the gate **STOPS temporarily.**
- As soon as the contact is RELEASED, the gate **keeps on opening**.

- If the OPENING safety edge is activated during **CLOSING**, the gate **STOPS and REVERSES** after about 1,5 seconds.
- The input can support up to a maximum of three 8K2 sensitive edges as per the diagram.





English

PROGRAMMING MENU Functions and Parameters

MAIN PARAMETERS Menu PA

PA	DESCRIPTION	MIN	MAX
n1	Working Time **motor 1**	00	99
n2	Working Time **motor 2**	00	99
F1	Forcre **motor 1**	08	19
F2	Force **motor 2**	08	19
Fr	Force during SLOWDOWN	10	19
r1	SLOWDOWN Time **motor 1**	00	n1
r2	SLOWDOWN Time **motor 2**	00	n2
tS	DELAY Time in **closing**	00	n1
SA	DELAY Time in **opening**	00	n2
tP	Automatic closing PAUSE time	00	99
Pd	PEDESTRIAN opening time FF complete opening of **motor 1**	00	FF
tC	LOCK PULSE	00	05
Fn	Limit switch settings: NC (no) / NO (S1)	no	S1
P0	REVERSING STROKE On(S1) / Off(no)	no	S1
P1	ELECTRIC LOCK On(S1) / Off (no)	no	S1
P2	MULTI-OCCUPATION On(S1) / Off (no)	no	S1
P3	AUTOMATIC Closing mode on (S1) / STEP-BY STEP mode on (no)	no	S1
P4	PRE-BLINKING long flashig (S1)/ normal flashing (no) flashing can also be tuned from **level 1.0 to level 5.0**	no	S1
P5	SINGLE Leaf gate (S1)/ DOUBLE Leaf gate (no)	no	S1
P6	SLOWDOWN On (S1) / Off (no)	no	S1
P7	MOTORS Test On (S1) / Off (no)	no	S1
P8	PHOTOCELLS Test On (S1) / Off (no)	no	S1
P9	SOFT START On (S1) / Off (no)	no	S1
SU	SAVE settings *Control unit automatically saves settings after 30 seconds if do not save manually*		

ADVANCED PARAMETERS PU

PU	DESCRIPTION
U0	GATE type mode P6 swing gate P5 sliding gate PH twin sliding gates
U1	Extension module for **output 1**
U2	Extension module for **output 2**
U3	Reverse motors direction
U4	Move output **motor 1** to **motor 2** (P5 mode only)
U5	Standby no = Off 01 = standard 02 = selective
U6	Show voltage: POWER and STANDBY mode
UA	OPEN/CLOSE **Motor 1** using onboard keys
Ub	OPEN/CLOSE **Motor 2** using onboard keys
U-	Last 10 fault events

RADIO Menu rA

rA	DESCRIPTION
r-	Display radio codes/ delete a single radio code
tc	Store a remote control key as **START**
CP	Store a remote control key as **STOP**
Pd	Store a remote control key as **PEDESTRIAN start**
EL	Store a remote control key as **ELECTRIC LOCK command**
C1	Store a remote control key for output **1/2**
C2	Store a remote control key for output **1/2**
rC	DELETE ALL existing radio codes
L-	Show last 10 remote controls' ID position
LO	Show the radiocard in use 1=built-in 2=optional external

INPUTS settings Menu EE

EE	DESCRIPTION
E1	Input 1
E2	Input 2
E3	Input 3
E4	Input 4
E5	Input 5
E6	Input 6
E7	Input 7
SU	Save and exit menu

E1	DESCRIPTION
no	Disable input
Go	Start
oP	Open
CL	Close
Po	Dead man Open command
PC	Dead man Close command
EL	Enable Electric lock
UC	Closing limit switch **MOTOR 2**

E2	DESCRIPTION
no	Disable input
St	Stop
UC	Closing limit switch **MOTOR 2**

E3	DESCRIPTION
no	Disable input
tC	Closing photocell
1c	1 resistive safety edge 8K2 - closing
2c	2 resistive safety edges 8K2 - closing
3c	3 resistive safety edges 8K2 - closing

E4	DESCRIPTION
no	Disable input
tA	Opening photocell
tC	Closing photocell
1o	1 resistive safety edge 8K2 - opening
2o	2 resistive safety edges 8K2 - opening
3o	3 resistive safety edges 8K2 - opening
UA	Opening limit switch **MOTOR 2**

E5	DESCRIPTION
no	Disable input
FC	Closing limit switch **MOTOR 1**

E6	DESCRIPTION
no	Disable input
FA	Opening Limit switch **MOTOR 1**

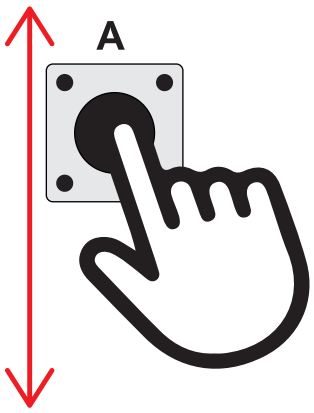
E7	DESCRIPTION
no	Disable input
PE	Start
oP	Apri
CL	Chiudi
Po	Dead man Open command
PC	Dead man Close command
EL	Enable Electric lock
Eo	Not used
UA	Opening limit switch **MOTOR 2**

English

MAIN Menu

The software includes 5 main menu.

PA	**Main Parameters**
PU	**Advanced Functions**
EE	**Inputs management**
rA	**Radio settings**
dE	**Reset to default**
AS	**Programming menu**



TASTI

A — Scroll into different main menus

B — Press B to enter main menus and to switch from one function to another.

C, D — Keys **C** and **D**

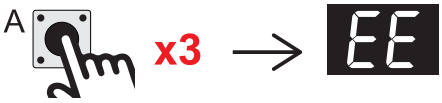
C - Increase value/turn parameter on
D - Decrease value/turn parameter off

Example

HOW TO SET SAFETY EDGE IN CLOSING (RESISTIVE) - PARAMETER EE

1)

2) Pess key **A** **3 times** until the display shows **EE**



3) Press Key **B** **onece** to enter Inputs Management menu

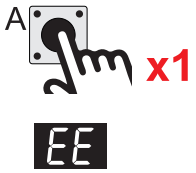
4) Press key **B** to scroll the list until the display shows **parameter E3**.

Press keys **C and D** to select the desided function.

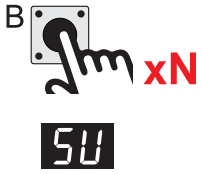
FUNZIONI DISPONIBILI

SAVING (manually)

1) Press key **A** **Once** to revert to menu **EE**



2) Press key **B** **Once** pto go back to **SU**



3) Press key **C** **to confirm**

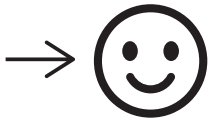
4) The display blinks

5) Once the display stops blinking the setting is correctly saved

AUTOMATIC SAVING

30 sec.

Wait for 30 seconds without pressing any key.



The setting will be saved automatically

PROGRAMMING Menu		DEFAULT		
PA	**MAIN PARAMETERS Menu**	rP	dS	dr
n1	Woriking Time **MOTOR 1**	21	13	9
n2	Working Time **MOTOR 2**	21	13	9
F1	Force MOTOR 1	14	10	12
F2	Force MOTOR 2	14	10	12
Fr	Force during **SLOWDOWN**	19	19	19
r1	SLOWDOWN Time **MOTOR 1**	7	4	4
r2	SLOWDOWN Time **MOTOR 2**	7	4	4
tS	DELAY Time in **Closing**	3	3	2
SA	Delay Time in **OPENING**	3	3	2
tP	Automatic closing **PAUSE TIME**	3	3	3
Pd	**PEDESTRIAN** OPENING Time	7	7	3
tC	Duration time for **LOCK PULSE**	0	0	0
P0	**REVERSING STROKE**	no	no	no
P1	ELECTRIC LOCK	no	no	S1
P2	MULTI OCCUPATION	no	no	no
P3	Automatic Closing / Step-by-step mode	S1	S1	S1
P4	PRE-BLINKING	no	no	no
P5	**SINGLE LEAF** gate	no	no	no
P6	SLOWDOWN	S1	S1	S1
P7	MOTOR Test	S1	no	S1
P8	PHOTOCELLS Test	no	no	no
P9	SOFT START	S1	S1	S1
SU	SAVE	S1	S1	S1
EE	**INPUTS management Menu**			
E1	**INPUT 1**			Go
E2	**INPUT 2**			no
E3	**INPUT 3**			tC
E4	**INPUT 4**			no
E5	**INPUT 5**			no
E6	**INPUT 6**			no
E7	**INPUT 7**			PE
SU	SAVE settings			S1 Key **C**

English

4 PROGRAMMING

4.1 PA MAIN PARAMETERS menu

Press key **A** to select main menu PA
Then press key **B** to scroll and reach **menù MAIN menu PARAMETERS**.
Press key **C and D** to change and/or confirm settings.

n1 MOTOR 1 Working time

1	Use keys **C and D** to set the **WORKING TIME**. Display shows:	01 ↓ 99 (MAX)
2	Press key **B** to scroll the menu till display shows:	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately	
	or wait 30 seconds for the unit to save automatically	

n2 MOTOR 2 Working time

1	Use keys **C and D** to set the **WORKING TIME**. Display shows:	01 ↓ 99 (MAX)
2	Press key **B** to scroll the menu till display shows:	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately	
	or wait 30 seconds for the unit to save automatically	

F1 Force MOTOR 1

1	Use keys **C and D** to set the **MOTOR FORCE**. Display shows:	08 ↓ 19
2	Press key **B** to scroll the menu till display shows:	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately	
	or wait 30 seconds for the unit to save automatically	

F2 Force MOTOR 2

1	Use keys **C and D** to set the **MOTOR FORCE**. Display shows:	08 ↓ 19
2	Press key **B** to scroll the menu till display shows:	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately	
	or wait 30 seconds for the unit to save automatically	

Fr Force during SLOWDOWN

1	Use keys **C and D** to set the **WORKING TIME**. Display shows:	10 ↓ 19
2	Press key **B** to scroll the menu till display shows:	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately	
	or wait 30 seconds for the unit to save automatically.	

r1 Slowdown Time MOTOR 1

1	Use keys **C and D** to set the **SLOWDOWN** time for MOTOR 1. Display shows: Total working time for motor **1** is **N1** including **r1** seconds of slowdown. If you want to increase slowdown seconds for motor **1** (for instance 3 seconds) make sure to increase **N1** value for 3 seconds as well as 3 sec for **r1**	0 ↓ (n1 - 2")
2	Press key **B** to scroll the menu till display shows:	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**	
	or wait 30 seconds for the unit to save automatically.	

r2 Slowdown Time MOTOR 2

1	Use keys **C and D** to set the **SLOWDOWN** time for MOTOR 2. Display shows: Total working time for motor **2** is **N2** including **r2** seconds of slowdown. If you want to increase slowdown seconds for motor **2** (for instance 3 seconds) make sure to increase **N2** value for 3 seconds as well as 3 sec for **r2**	0 ↓ (n2 - 2")
2	Press key **B** to scroll the menu till display shows:	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**	
	or wait 30 seconds for the unit to save automatically.	

tS DELAY time in CLOSING

1	Use keys **C and D** to set the **DELAY TIME** for CLOSING. Display shows :	0 ↓ n2
2	Press key **B** to scroll the menu till display shows	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**	
	or wait 30 seconds for the unit to save automatically.	

SA DELAY time in OPENING

1	Use keys **C and D** to set the **DELAY TIME** for OPENING. Display shows :	0 ↓ n1
2	Press key **B** to scroll the menu till display shows	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately	
	or wait 30 seconds for the unit to save automatically.	

English

tP Automatic closing PAUSE time

1	Use keys **C and D** to set the **PAUSE time** for Automatic Closing. Display shows : **1 = 1sec**	0 ↓ 99 (MAX)
2	Press key **B** to scroll the menu till display shows	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately	
	or wait 30 seconds for the unit to save automatically	

Pd PDESTRIAN opening Time

1	Use keys **C and D** to set the **PEDESTRIAN opening** Time. Display shows :	0 ↓ FF
2	FF value equals M1 Working Time	
2	Press key **B** to scroll the menu till display shows	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately	
	or wait 30 seconds for the unit to save automatically.	

tC LOCK PULSE time

1	Use keys **C and D** to set the **LOCK PULSE** Time. Display shows : 1= 0,5 Second	0 ↓ (1 - 5)
2	Press key **B** to scroll the menu till display shows	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**	
	or wait 30 seconds for the unit to save automatically.	

Fn LIMIT SWITCHES settings NC/NO

1	Use keys **C and D** to set the **LIMIT SWITCHES** functional logic Display shows :	S1 no
2	Press key **B** to scroll the menu till display shows:	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately	
	or wait 30 seconds for the unit to save automatically.	

PO REVERSING STROKE

1	Use keys **C and D** to set the **REVERSE STROKE** function logic Display shows:	ON = S1 OFF= no
2	Press key **B** to scroll the menu till display shows:	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**	
	or wait 30 seconds for the unit to save automatically.	

P1 ELECTRIC LOCK

1	Use keys **C and D** to set the **ELECTRIC LOCK** function. Display shows :	ON = OFF=	S1 no
2	Press key **B** to scroll the menu till display shows		SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**		
	or wait 30 seconds for the unit to save automatically.		

P2 MULTI-OCCUPATION Function

1	Use keys **C and D** to set the **MULTI-OCCUPATION** function. Display shows :	ON = OFF=	S1 no
2	Press key **B** to scroll the menu till display shows.		SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**		
	or wait 30 seconds for the unit to save automatically.		

P3 AUTOMATIC CLOSING

1	Use keys **C and D** to set the **AUTOMATIC CLOSING** function. Display shows :	ON = OFF=	S1 no
2	Press key **B** to scroll the menu till display shows:		SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**		
	or wait 30 seconds for the unit to save automatically.		

P4 PRE-BLINKING

1	Use keys **C and D** to set the **PRE-BLINKING** function. Display shows :	ON = OFF=	S1 no
2	Press key **B** to scroll the menu till display shows		SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**		
	or wait 30 seconds for the unit to save automatically.		

P5 SINGLE LEAF gate

1	Use keys **C and D** to set the **SINGLE LEAF** function. Display shows :	ON = OFF=	S1 no
2	Press key **B** to scroll the menu till display shows.		SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**		
	or wait 30 seconds for the unit to save automatically.		

P6 SLOWDOWN

1	Use keys **C and D** to set the **SLOWDOWN** function. Display shows :	ON = OFF=	S1 no
2	Press key **B** to scroll the menu till display shows		SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately		
	or wait 30 seconds for the unit to save automatically.		

English

P7 MOTOR Test

1	Use keys **C and D** to set the **MOTOR TEST** function Display shows:	ON = OFF=	S1 no
2	Press key **B** to scroll the menu till display shows.		SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**		
	or wait 30 seconds for the unit to save automatically.		

P8 PHOTOCELL Test

1	Use keys **C and D** to set the **PHOTOCELL TEST** function Display shows :	ON = OFF=	S1 no
2	Press key **B** to scroll the menu till display shows.		SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**		
	or wait 30 seconds for the unit to save automatically.		

P9 SOFT START

1	Use keys **C and D** to set the **SOFT START** function Display shows :	ON = OFF=	S1 no
2	Press key **B** to scroll the menu till display shows		SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**		
	or wait 30 seconds for the unit to save automatically.		

SU SAVE

1	1 Press and hold key **C** during 5 seconds to **SAVE alll settings.**	S1

4.2 PU USER menu

Press key **A** to select menu PU
Press key **B** to scroll and get to **USER menu**
Press keys **C and D** to adjust/confirm settings

U0 GATE use: SWING / SLIDING / TWIN SLIDING

1	Press and hold key **C or D** for 3 seconds to swich gate use mode.	
2	The display blinks for 3 second and the shows the current setting: ***The gate use setting appears also as first message when you power the unit***	SWING gate = Pb SLIDING gate = PS TWIN slinding gate = PH
3	Press key **B** to scroll the menu till display shows.	SU
4	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**	
	or wait 30 seconds for the unit to save automatically	

U3 REVERSE MOTORS DIRECTION

1	Press keys **C or D** to reverse the two pahses of the motor, the display will show (use to correct wrong wiring of the motors)	S1
2	How to reverse motors direction: **MOTOR 1** **MOTOR 2** 13 14 15 16 17 18 OPEN COMMON CLOSE OPEN COMMON CLOSE	S1
	MOTOR 1 **MOTOR 2** 13 14 15 16 17 18 OPEN COMMON CLOSE OPEN COMMON CLOSE	no
3	Press key **B** to scroll the menu till display shows.	SU
4	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**	
	or wait 30 seconds for the unit to save automatically	

U5 STANDBY Mode

1	Press keys **C or D** to set the standby mode	**OFF =** no **ON (STANDARD) =** 01 **ON (SELECTIVE) =** 02
2	Press key **B** to scroll the menu till display shows	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**	
	or wait 30 seconds for the unit to save automatically	

U6 SHOW VOLTAGE

1	Pres key **C** to scroll until display shows
2	Press key **C** to enter, the display shows detected voltage.

English

UA OPEN/CLOSE MOTOR 1 using onboard keys

1	Use keys **C and D** to set the function for MOTOR 1: **OPEN =** **CLOSE=**	

Ub OPEN/CLOSE MOTOR 2 using onboard keys

1	Use keys **C and D** to set the function for MOTOR 2 : **OPEN =** **CLOSE=**	

U- LAST 10 FAULT EVENTS

1	UsE **C e D** keys to view the **LAST 10 FAULT EVENTS.** The control unit stores the last 10 detected faults, where number 1 is the most recent. If you stay on the value for a few seconds, the control unit will display the fault.	

4.3 EE INPUTS Menu

Press key **A** to selct menu EE
Use key **B** to scroll and get to **INPUTS Menu**.
Press keys **C and D** to change/confirm settings.

E1 INPUT 1

1	Use keys **C and D** to set the **INPUT 1** mode Display shows :	OFF = no START = Go OPEN = oP CLOSE = CL OPEN Dead-man mode = Po CLOSE Dead-man mode = PC ELECTRIC LOCK = EL LIMIT SWITCH MOTOR 2 = UC
2	Press key **B** to scroll the menu till display shows	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**	
	or wait 30 seconds for the unit to save automatically	

E2 INPUT 2

1	Use keys **C and D** to set the **INPUT 2** mode Display shows :	OFF = no LIMIT SWITCH MOTOR 2 = St UC
2	Press key **B** to scroll the menu till display shows.	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**	
	or wait 30 seconds for the unit to save automatically	

E3 INPUT 3

1	Use keys **C and D** to set the **INPUT 3** mode Display shows :	OFF = no CLOSING PHOTOCELL = tC 1 CLOSING Safety Edge 8K2 = 1c 2 CLOSING Safety Edge 8K2 = 2c 3 CLOSING Safety Edge 8K2 = 3c
2	Press key **B** to scroll the menu till display shows.	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**	
	or wait 30 seconds for the unit to save automatically.	

English

E4 INPUT 4

1	Use keys **C and D** to set the **INPUT 4** mode Display shows : OFF = OPENING PHOTOCELL = CLOSING PHOTOCELL = 1 OPENING Safety Edge 8K2 = 2 OPENING Safety Edge 8K2 = 3 OPENING Safety Edge 8K2 = OPENING limit switch MOTOR 2 =	no tA tC 1o 2o 3o UA
2	Press key **B** to scroll the menu till display shows.	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**	
	or wait 30 seconds for the unit to save automatically.	

E5 INPUT 5

1	Use keys **C and D** to set the **INPUT 5** mode Display shows : OFF = CLOSING limit switch MOTOR 1 =	no FC
2	Press key **B** to scroll the menu till display shows.	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**	
	or wait 30 seconds for the unit to save automatically.	

E6 INPUT 6

1	Use keys **C and D** to set the **INPUT 6** mode Display shows : OFF = OPENING limit switch MOTOR 1 =	no FA
2	Press key **B** to scroll the menu till display shows	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**	
	or wait 30 seconds for the unit to save automatically.	

E7 INPUT 7

1	Use keys **C and D** to set the **INPUT 7** mode Display shows : OFF = START = OPEN = CLOSE = OPEN Dead-man mode = CLOSE Dead-man mode = ELECTRIC LOCK = void parameter = LIMIT SWITCH MOTOR 2 =	no PE oP CL Po PC EL Eo UA
2	Press key **B** to scroll the menu till display shows.	SU
3	Press and hold key **C** for **5 seconds**, to **SAVE** the settings immediately**.**	
	or wait 30 seconds for the unit to save automatically.	

SU SAVE

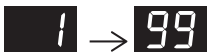
1	Select the parameter and press and hold key **C** for **5 seconds**, to **SAVE all settings.**	S1

4.4 rA RADIO

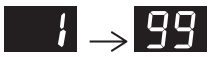
Press key **A** to select menu rA
Use key **B** to scroll and get to **RADIO Menu**
Use keys **C and D** to adjust/confirm settings.

Total radio capacity = 99 codes

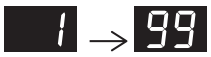
r- Display RADIO CODES MEMORY

1	The display shows the stored radio codes' position from 1 to 99	
2	You can delete a SINGLE radio code by scrolling to desired radio code position and pressing key **D**	

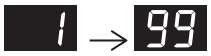
tc Store a NEW radio code/remote control

1	Press and hold the remote control. A red dot will appear on the display to confirm a code is being transmitted.	
2	Simultaneously press key **C** to save storage	

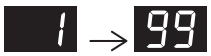
CP Store a radio code/remote control as STOP Function

1	Press and hold the remote control	
2	A red dot will appear on the display to confirm a code is being transmitted.	
3	Simultaneously press key **C** to save storage	

Pd Store a radio code/remote control as PEDESTRIAN openning

1	Press and hold the remote control	
2	A red dot will appear on the display to confirm a code is being transmitted.	
3	Simultaneously press key **C** to save storage	

EL Store a radio code/remote control for ELECTRIC-LOCK use

1	Press and hold the remote control	
2	A red dot will appear on the display to confirm a code is being transmitted.	
3	Simultaneously press key **C** to save storage	

rC DELETE ALL Existing Radio codes/Remote controls

1	Press and hold key **D** until the display shows	
2	ALL stored radio codes have been DELETED	

L- See last 10 remote controls' ID

You can see ID of the last 10 radio signal received buy the radio card.
The unit automatically assign ID number when a new radio code is stored.
The list displays the last radio code in use, from the last used to the oldest.

1	Scroll the events list using keys **C** and **D**. The display shows the position of the radio code in the events list and the then the radio code ID	LAST radio code used = OLDEST =	 
	So you can keep track of the radio code in use		

English

LO RADIO CARD

You can use this function to select and check the radio card currently in use

1	The display shows BUILT-IN Radio = EXTERNAL Radio card =	
	In case of external (optional radio code) use this function to make sure the card is correctly installed	

4.5 dE DEFAULT - Factory values

Press key **A** and select menu dE
Use key **B** to scroll and get to **DEFAULT Menu**.

rP RAM operator - reset to Factory values

Press and hold key **C** to RESTORE factory values for RAM motor

dS ARTICULATED ARM operator - reset to Factory values

Press and hold key **C** to RESTORE factory values for ARTICULATED ARM motor

dr WHEEL operator - reset to Factory values

Press and hold key **C** to RESTORE factory values for WHEEL motor

4.6 AS SEQUENTIAL PROGRAMMING

Press key **A** to select menu AS
Press key **B** to scroll the menu

1N SEQUENTIAL programming 1 MOTOR

1	Send a **START** pulse, the gate **OPENS** and the display shows	n1
2	When the door has completed approximately 90% of the cruise send a **START command**; the display shows: and **SLOWDOWN** begins.	r1
3	Upon reaching the opening position let the motor running still another 4/5 seconds and then send a **START command again.**	
4	The display shows: The control unit has stored the **OPENING** and **SLOWDOWN** times The display shows and starts counting the **PAUSE TIME**	tP
5	Upon reaching the desired **PAUSE TIME**, send another START pulse. The control unit has stored the **PAUSE** TIME, and the gate **begins the CLOSING** cycle.	
6	Let the gate reaching the closing position. The control unit goes automatically out of the programming mode, the procedure is completed.	

2N SEQUENTIAL programming DOUBLE LEAF gate

1	Send a **START** pulse, the gate **OPENS** and the display shows	n1
2	When MOTOR 1 has completed approximately 90% of the cruise send a **START command**; the display shows: and **SLOWDOWN** of MOTOR 1 begins	r1
3	When MOTOR 1 is in opening position, wait 4/5 seconds and send a **START command**. the display shows: and **MOTOR 2 begins to open**.	n2
4	When MOTOR 2 has completed approximately 90% of the cruise send a **START command**; the display shows: and **SLOWDOWN of MOTOR 2 begins**	r2
5	When MOTOR 2 is in opening position, wait 4/5 seconds and send a **START command**.	
6	The display shows: The control unit has stored the **OPENING** and **SLOWDOWN** times The display shows and starts counting the **PAUSE TIME**	tP
7	Upon reaching the desired **PAUSE TIME**, send another START pulse. The control unit has stored the **PAUSE** TIME, and the gate **begins the CLOSING** cycle	
8	Let the gate reaching the closing position. The control unit goes automatically out of the programming mode, the procedure is completed.	

English

5. DIAGNOSTIC AND TROUBLE-SHOOTING Error messages

ERROR	FAULT	Suspected issue	Solution
EF	PHOTOCELL TEST	• Incorrect wiring.	Check the wiring according to the diagram
		• Photocell is not compatible.	Try original photocell
tA	OPENING PHOTOCELL	• Photocell is not aligned	Check the position of the transmitter and the receiver.
		• Obstacle cutting the photocell beam	Clear the photocell from any obstacle and dust.
		• Incorrect wiring	Double check wirings acccording to the wiring diagram.
		• Photocell not powered	Check voltage.
		• Photocell is not wired, input setting is not OFF	Disable input (refer to chapter E4)
tC	CLOSING PHOTOCELL	• Photocell is not aligned	Check the position of the transmitter and the receiver.
		• Obstacle cutting the photocell beam	Clear the photocell from any obstacle and dust
		• Incorrect wiring	Double check wirings acccording to the wiring diagram
		• Photocell not powered	Check voltage.
		• Photocell is not wired, input setting is not OFF	Disable input (refer to chapter E3)
FH	OPENING and CLOSING PHOTOCELLS	• Fault on both photocells	Check the control unit is properly powered
			Check wirings
oo	OPENING 8K2 SAFETY EDGE	• Safety edge is not wired	Double check wirings acccording to the wiring diagram
		• Input mode not set for resisteve 8k2 safety edge	Set the input as resistive safety edge (refer to chapter E4)
cc	CLOSING 8K2 SAFETY EDGE	• Safety edge is not wired	Double check wirings acccording to the wiring diagram
		• Input mode not set for resisteve 8k2 safety edge	Set the input as resistive safety edge (refer to chapter E3)
St	STOP	• Push button not detected	Wire the emergency push button or set input paramater to OFF (refer to chapter E2)
		• Incorrect wiring	Double check wirings acccording to the wiring diagram (chapter 3.5)
PE	PERMANENT PEDESTRIAN START SIGNAL	• Permanent PEDESTRAN START signal	Check the perfect operation of all accessories connected to the pedestrian start input. (N.O. contact)
GO	PERMANENT START SIGNAL	• Permanent START signal	Check the perfect operation of all accessories connected to the start input. (N.O. contact)
--	PERMANENT RADIO SIGNAL	• Permanent RADIO CODE signal	Check the efficiency of the keys on each individual remote control. If a key is stuck, the LED on the remote control remains steadily lit. Remove the battery and check the fault is cleared.
			Same radio frequency interference.
n1	TEST MOTOR 1	• Motor is not wired	Wire Motor 1 as per diagram. Check the integrity of the fuse.
		• Incorrect wiring	Check the correct wiring of Motor 1 (refer to chapter 3.1)
		• Faulty stator	Use a “tester device” to check the stator voltage.
n2	TEST MOTOR 2	• Motor is not wired	Wire Motor 2 as per diagram. Check the integrity of the fuse.
		• Incorrect wiring	Check the correct wiring of Motor 2 (refer to chapter 3.1)
		• Faulty stator	Use a “tester device” to check the stator voltage.
nr	MOTORS TEST	• Motors not wired	Check the wiring of the motors.
OE	OVERVOLTAGE damage		
1P	POWER SUPPLY fault	• Incorrect wiring	Double check wirings acccording to the wiring diagram.
		• Unstable voltage detected	Use original power source
2P	POWER SUPPLY fault	• Incorrect wiring	Double check wirings acccording to the wiring diagram
		• Unstable voltage detected	Use original power source
3P	POWER SUPPLY fault	• Incorrect wiring	Double check wirings acccording to the wiring diagram
		• Unstable voltage detected	Use original power source
1H	MOTOR 1 LIMIT SWITCH OPENING + CLOSING	• Faulty limit-switch	Check if the limit-switch operates correctly
		• Incorrect limit switch wiring	
2H	MOTOR 2 LIMIT SWITCH OPENING + CLOSING	• Faulty limit-switch	Check if the limit-switch operates correctly
		• Incorrect limit switch wiring	
3H	MOTOR 1+ 2 LIMIT SWITCH OPENING + CLOSING	• Faulty limit-switch	Check if the limit-switch operates correctly
		• Incorrect limit switch wiring	Check the limit-switches wiring diagram

6. DISPOSAL

Do not pollute the envinronment

Some electronic components may contain polluting substances.
Dispose through designated collection centers and in accordance with local regulations.

DICHIARAZIONE CE DI CONFORMITA'

MANUFACTURER: **PROTECO S.r.l**
ADDRESS: Via Neive, 77 – 12050 Castagnito (CN) – ITALIA

declares that
PRODUTC TYPE: Centrol unit for swing gates 230V, **Q60AB**
MODELS: **PQ60AB1**
ACCESSORIES: **MEL01**

Is built to be integrated into a machine or to be assembled with other machinery to create a machine under provisions of 2006/42/EC Machinery Directive.

It complies with the essential requirements of EEC Directives:
2014/30/UE (EMC)
2014/35/UE (LVD)
2014/53/UE (RED)
RoHS 3 UE 2015/863

The manufacturer declares that the start-up of the machinery is not permitted unless the machine, in which the product is incorporated or of which is becoming a component, has been identified and declared as conformed to 2006/42/EC Machinery Directive.

Note: These products have been tested in a typical homogeneous configuration.

Castagnito, May 5th 2026

Marco Gallo
C.E.O.

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