

Q20S



Control panel for sliding gates - 24V dc

- Display for programming and trouble-shooting.
- Electronic adjustment of working and slowdown times.
- Dual programming modes: automatic with obstacle detection feature or sequential step-by-step.
- Quick closing.
- Pedestrian opening.
- Multi-occupation function.
- Pre-blinking.
- Second radio channel interface (available as accessory).
- Integrated radio receiver 433,92MHz (99 users) suitable for both fixed and rolling-code Proteco's transmitters.
- Individual output for **MECHANICAL** N.C. and **RESISTIVE 8K2** safety edges.
- Operational self diagnostic.

TECHNICAL FEATURES

Item	PQ20S, PQ20S1D
Dimensions	137 x 84 x 37 mm
Box dimensions	220 x 290 x 90 mm
Pcb's weight	160 g
Main power	1700 g
Tension to control unit	230V ac ~ 50-60 Hz -10% +20%
Main power tolerance	20V ac
Transformer	230/20V – 130 VA
Main fuse	2 A
Battery fuse	10 A
Rated power input	250 W
Max. absorption rate	10 A
Absorption in stand-by	40 mA
Blinker	24V dc, max 20 W
Accessories	24V dc , max 5 W
Working temperature	-20 +60 °C
IP rate (boxed)	IP55

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1. WARNINGS AND INSTALLATION TIPS

WARNING: This manual contains important information concerning personal safety. An incorrect installation or an improper use may lead to severe injuries.

Read carefully and pay particular attention to the safety sections marked by the symbol .

Store this manual safely for future use



Do not allow children or pets near your gate. Never let children operate or play with gate controls. Keep the remote controls away from children and unauthorised users.



All wirings or operations on the control panel must be performed with the control panel disconnected from the power supply.

Wiring, settings and commissioning of this control board must be carried out by qualified and experienced personnel only. The installation has to comply to laws and regulations in force, with particular reference to EN 12445 provisions.

This appliance is only to be used with the power supply unit provided with the appliance.

Means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules and wiring diagram (please see paragraph 3).

When operating a based-off switch, make sure that other persons are kept away. Frequently examine the installation for signs of wear or damage to cables.

Do not use if repair or adjustment is needed.

CE COMPLIANCE DECLARATION

Manufacturer: **PROTECO S.r.l.**
Address: Via Neive, 77 - 12050 CASTAGNITO (CN) - ITALIA

declares that

The product type: Q20S ELECTRONIC CONTROLLER for sliding gates 24V
Modello: **PQ20S, PQ20S1D**

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)
RoHS2 2011/65/CE

And with **EN 60335-1 - EN 60335-2-103**

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 undergone test in a typical uniform configuration.

Castagnito, July 18th 2018

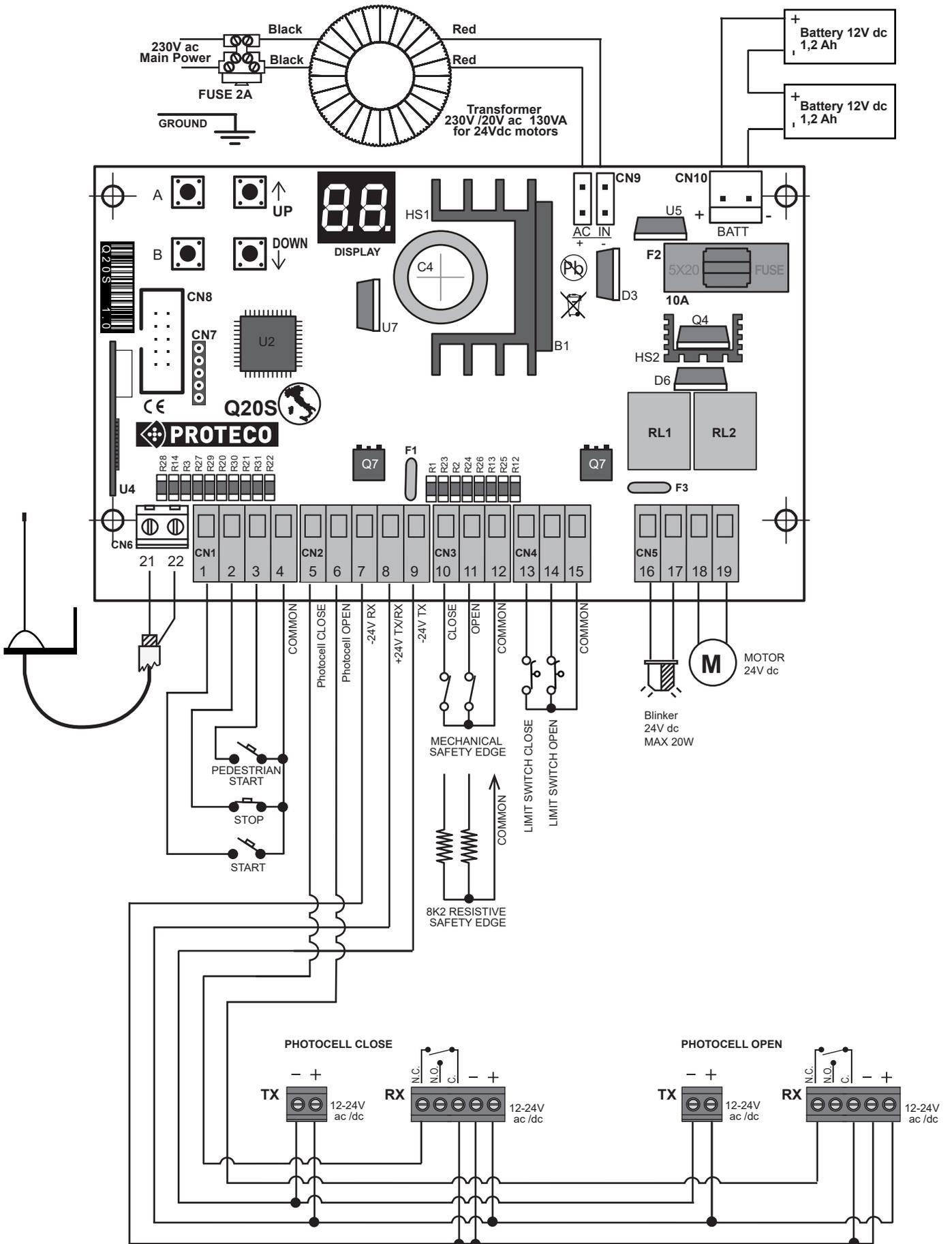
Marco Gallo

CEO

3. WIRING TABLE

motors **24Vdc**

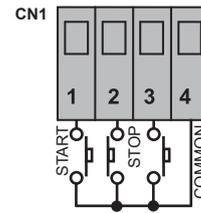
English



Terminals (INPUTS / OUTPUTS)

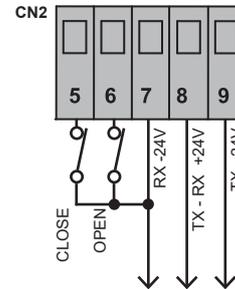
CN1 = START contacts

- 1 START (contact N.O.)
- 2 STOP push button (contact N.C.)
- 3 PEDESTRIAN START (contact N.O.)
- 4 COMMON



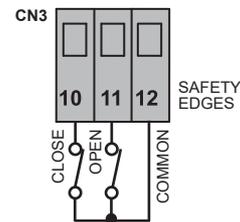
CN2 = PHOTOCELLS

- 5 CLOSE (contact N.C.)
- 6 OPEN (contact N.C.)
- 7 RX PHOTOCCELL -24V
- 8 TX/RX +24V
- 9 TX PHOTOCCELL -24V



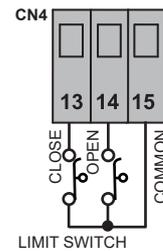
CN3 = SAFETY EDGES

- 10 CLOSE
- 11 OPEN
- 12 COMMON



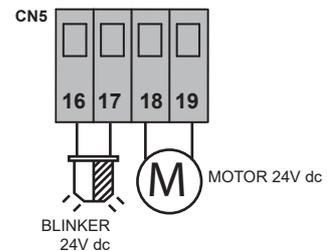
CN4 = LIMIT SWITCH

- 13 CLOSE
- 14 OPEN
- 15 COMMON



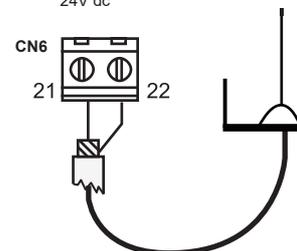
CN5 = BLINKER and MOTOR

- 16 } Blinker 24V dc 20W mx.
- 17 }
- 18 } Motor 24V dc
- 19 }

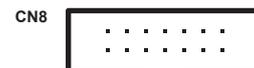


CN6 = EXTERNAL AERIAL

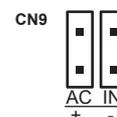
- 21 Coaxial wire 1 (SIGNAL)
- 22 Coaxial wire 2 (EARTH)



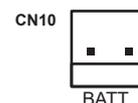
CN8 = 2° radio channel interface plug



CN9 = Secondary transformer 24Vac



CN10 = Battery



3.1 MOTOR and LIMIT SWITCH wiring

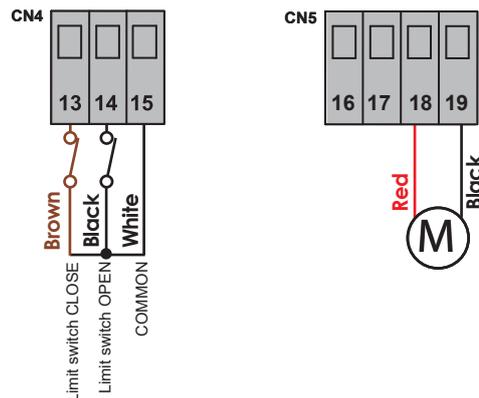
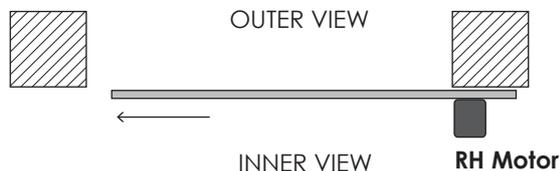
Once the motor has been positioned, wire as shown below.



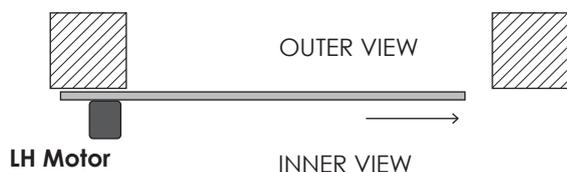
By default the motor comes RH pre-wired (inner view).

3.1.1 Motor with MECHANICAL LIMIT SWITCH

Motor positioned to the RIGHT of the gate



Motor positioned to the LEFT of the gate



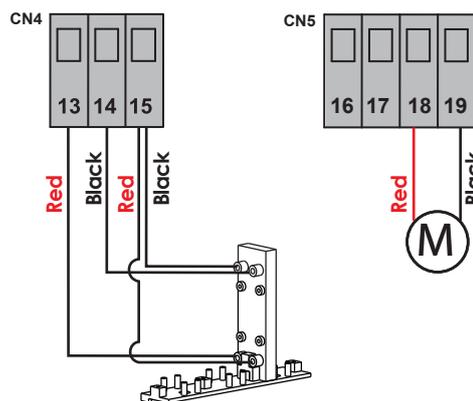
If the motor is positioned to the LEFT (inner view), change the operational direction, going to **[6]** and setting **01** (motor inversion)



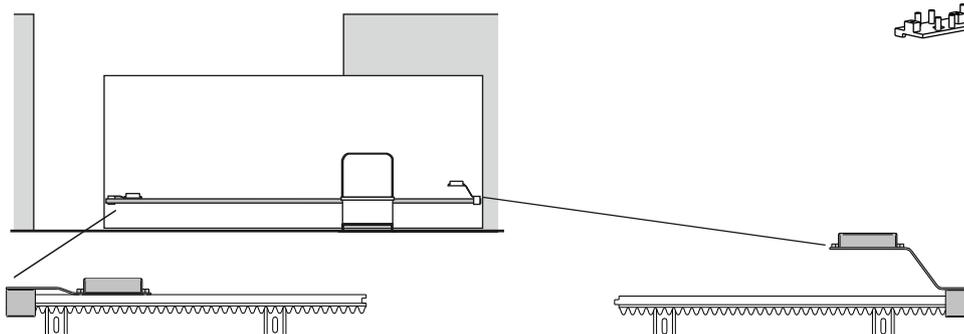
By default the motor comes RH pre-wired (inner view)

3.1.2 Motor with MAGNETIC LIMIT SWITCH

If the motor is fitted with MAGNETIC limit switch, go to **[7]** and set **01** (magnetic limit switch mode ON).



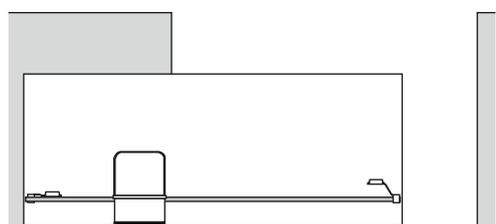
Motor positioned to the RIGHT of the gate (inner view)



The **SMALL** magnetic switch must always be positioned to the **LEFT** in **OPENING**.

The **BIG** magnetic switch must always be positioned to the **RIGHT** in **CLOSING**.

Motor positioned to the LEFT of the gate (inner view)



If the motor is positioned to the LEFT (inner view), change the operational direction, going to **[6]** and setting **01** (motor / limit switch inversion).

3.2 MAIN POWER

Once all wirings are done, power the control unit. Connect the 230V to the **transformer (130VA, primary 230V - secondary 20V)** and the transformer's output to CN9.

3.2.1 BATTERY

In case of power cut it is possible to connect no. 2 back-up batteries 12V 1,2Ah to **CN10**.

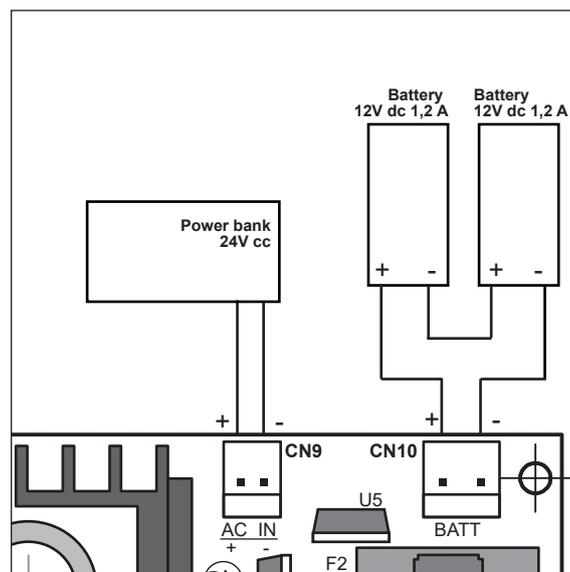
3.2.2 DC TENSION

It is possible to power the control unit DC.

Replace the transformer by any other kind of power bank and wire to **CN9**, as picture shows.

Pay attention to polarity (+ / -).

If polarity is inverted, the control unit automatically goes to low consumption mode.



3.3 START PUSH BUTTON

It is possible to connect a START PUSH BUTTON (contact N.O.) to **1-4**, terminal **CN1**.

An additional START PUSH BUTTON shall be wired in **PARALLEL** (contact N.O.).

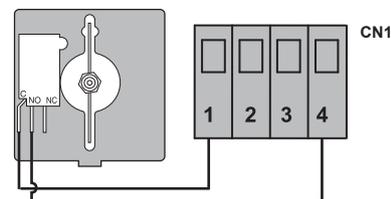
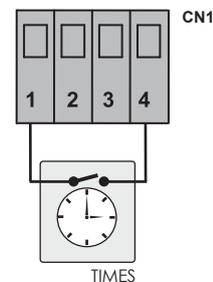
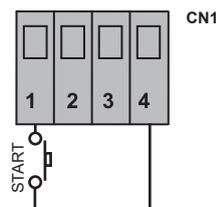
3.3.1 TIMER

It is possible to connect a TIMER (contact N.O.) to **1-4**, terminal **CN1**.

When the TIMER is fitted, the gate remains OPENED for the whole time set and then CLOSES automatically.

ATTENTION!:

If a TIMER is connected, it is necessary to set the MULTI-OCCUPATION function, **H1** on **01**.



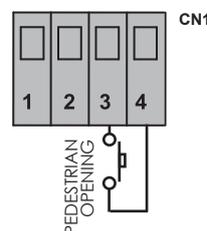
3.3.2 KEY SWITCH

It is possible to connect a KEY SWITCH (contact N.O.) to **1-4**, terminal **CN1**.

3.4 PEDESTRIAN OPENING

PEDESTRIAN START contacts (N.O.) must be wired to **3-4**, terminal **CN1**.

Additional PEDESTRIAN START contacts shall be wired in **PARALLEL** (contact N.O.)

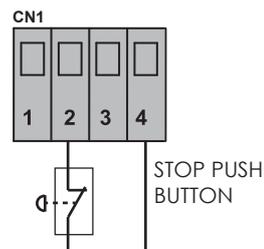


3.5 STOP PUSH BUTTON

Wire the STOP push button (contact N.C.) to **2-4**, terminal **CN1**.
Additional STOP push buttons shall be wired in **series** (contact N.C.).

 **The emergency STOP push button is highly recommended for safety of people and objects**

NB: If no STOP PUSH BUTTON is connected, set **P1** to **00**.



3.6 PHOTOCELLS

3.6.1 Photocells in CLOSING

Wire the photocells to **7-8-9**, terminal **CN2**.
Wire the N.C. contact of the photocells to **5-7**, terminal **CN2**.
An additional set of photocells can be connected, wiring in **SERIES** the N.C. contacts.

- If the photocell beam is interrupted during CLOSING, the gate **STOPS** and reverses for 1,5 seconds.
- If the photocell beam is interrupted during opening, the gate keeps on working normally.

 **For safety reasons a set of photocells must be installed to protect the gate OPENING area**

NB: If no PHOTOCELL in OPENING is connected, set **P2** to **00**.

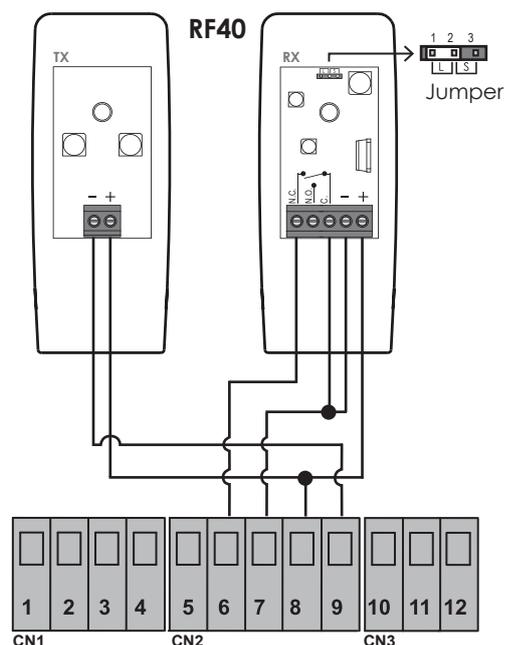
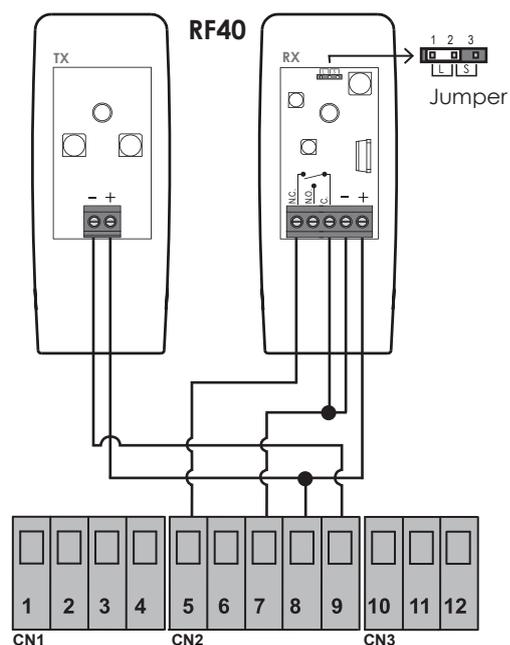
3.6.2 Photocells in OPENING

Wire the photocells to **7-8-9**, terminal **CN2**.
Wire the N.C. contact of the photocells to **6-7**, terminal **CN2**.
An additional set of photocells can be connected, wiring in **SERIES** the N.C. contacts.

- If the photocell beam is interrupted during opening, the gate **STOPS**.
- Once the beam is free from obstacles, the gate **RESTARTS** opening normally.

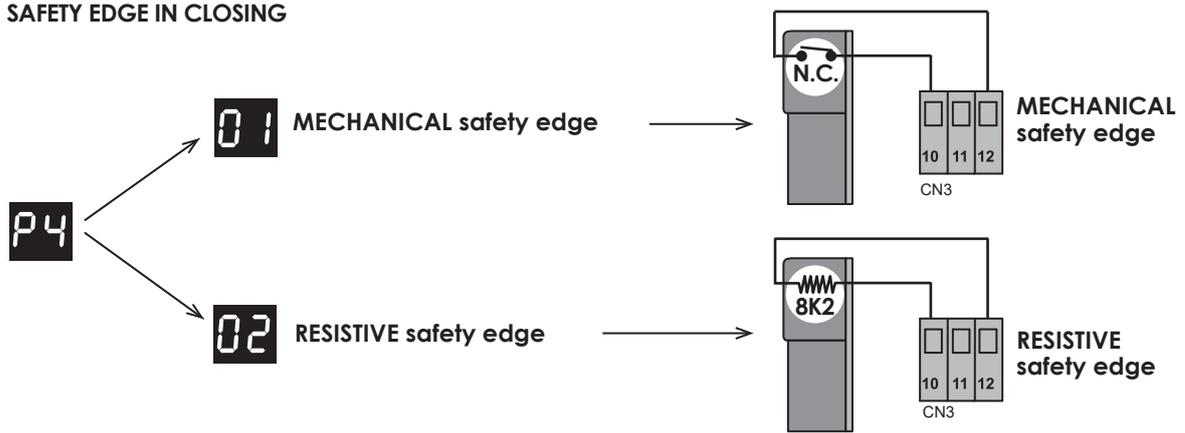
 **For safety reasons a set of photocells must be installed to protect the gate OPENING area.**

NB: If no PHOTOCELL in OPENING is connected, set **P3** to **00**.



3.7 SAFETY EDGE

3.7.1 SAFETY EDGE IN CLOSING



Wire the SAFETY EDGE to **10 – 12**, terminal **CN3**.

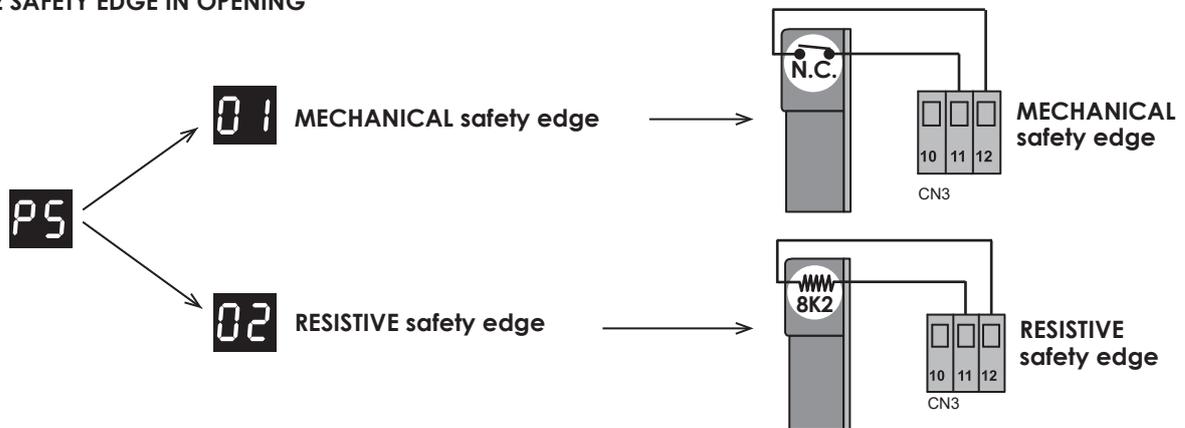
NB: If no SAFETY EDGE is connected in CLOSING, set **P4** to **00**.



The operation of the SAFETY EDGE in **CLOSING** stops the gate and reverses to opening position. The gate remains opened as long as another **CLOSING** command is given.

The operation of the SAFETY EDGE in **OPENING** doesn't affect the normal duty cycle.

3.7.2 SAFETY EDGE IN OPENING



Wire the SAFETY EDGE to **11 – 12**, terminal **CN3**.

NB: If no SAFETY EDGE is connected in OPENING, set **P5** to **00**.



The operation of the SAFETY EDGE in **OPENING** stops the gate and reverses to closing position for 10 cm. The gate remains still as long as another **OPENING** command is given.

The operation of the SAFETY EDGE in **CLOSING** doesn't affect the normal duty cycle.

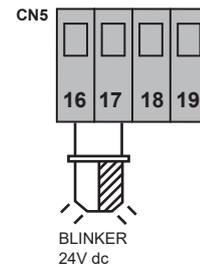
3.8 BLINKER

Wire the blinker (max 20W) to **16- 17**, terminal **CN5**.

- **SLOW** flash → **OPENING**
- **QUICK** flash → **CLOSING**
- Light **ON and FIXED** → **COUNTDOWN**

NB:

The **HL** setting allows to choose the outgoing tension: **00** intermittent tension (Default), or **01** fixed tension.



3.9 Second radio channel AUX / WARNING LIGHT / COURTESY LIGHT / MAGNETIC LOCK



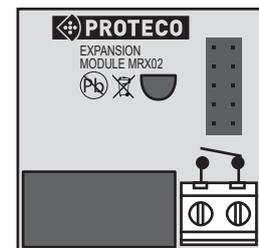
Switch the **POWER OFF** before plugging the interface.

(sold separately)

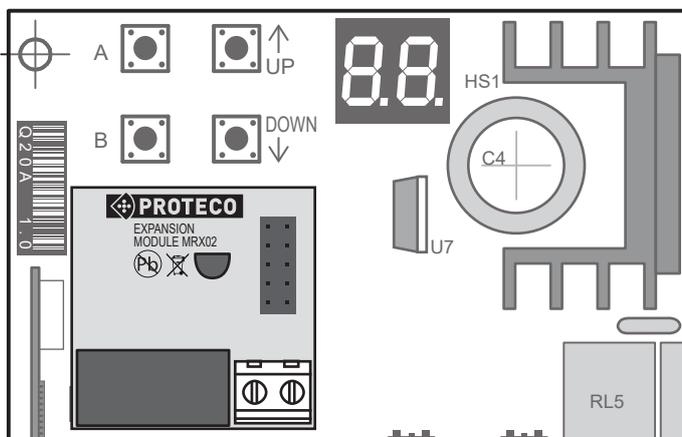
Plug the interface **MRX02** (sold as optional) into **CN8** according to the driving slot.

MRX02

Go to **AA** and set **A6**.



RELAY
MAX 1A - 24V





AA RADIO settings		
A1	RECORDING a transmitter as OPENING COMMAND	01.....99 (users) FL = full memory
A2	RECORDING a transmitter as PEDESTRIAN OPENING	01.....99 (users) FL = full memory
A3	RECORDING a transmitter as SECOND RADIO CHANNEL (optional)	01.....99 (users) FL = full memory
A4	DELETING a single transmitter	01.....99
A5	DELETING all transmitters at once	
A6	SETTING the 2° radio channel interface	01.....05
CC PROGRAMMING		
C1	AUTOMATIC with OBSTACLE DETECTION feature	
C2	SEQUENTIAL (step by step without obstacle detection)	
C3	Return to the DEFAULT SETTINGS	
C6	MOTOR positioning, RH or LH	RH
C7	ELECTROMECHANICAL or MAGNETIC LIMIT SWITCH	MECHANICAL
FF MOTOR TORQUE / OBSTACLE DETECTION		
F3	OBSTACLE DETECTION - AUTOMATIC MODE ONLY C1	
F5	SLOWDOWN SPEED	01 (min)...05()..... 10 (max)
HH FUNCTIONS		
H1	MULTI-OCCUPATION	00 = OFF 01 = ON
H2	PRE-BLINKING	00 = OFF 01 = ON
H4	PHOTOCELL TEST	00 = OFF 01 = ON
H8	QUICK CLOSING	00 = OFF 01 = ON
HC	MOTOR TEST	00 = OFF 01 = ON
HL	BLINKER TENSION	00 = INTERMITTENT 01 = FIXED
LL TIMES		
L3	AUTOMATIC CLOSING	00 = OFF 01 (min)...03()..... 99(max)
L4	PEDESTRIAN AUTOMATIC CLOSING	00 = OFF 01 (min)...03()..... 99(max)
L7	SLOWDOWN	00 = OFF 01 (min)...07()..... 10 (max)
L9	PEDESTRIAN OPENING	01 (min)...07()..... 25(max)

PP SAFETY DEVICES

P1	STOP push button	00 = OFF  01 = ON
P2	PHOTOCELL in CLOSING	00 = OFF  01 = ON
P3	PHOTOCELL in OPENING	00 = OFF  01 = ON
P4	SAFETY EDGE in CLOSING	00 = OFF  01 = MECHANICAL 02 = RESISTIVE
P5	SAFETY EDGE in OPENING	00 = OFF  01 = MECHANICAL 02 = RESISTIVE

UU MAINTENANCE and SERVICE

U1	Cycles performed (no possibility of RESET)	EX.: 12573 cycles Display shows the cycles performed in 3 sequences 01 25 73
U2	Set maintenance COUNTDOWN	00 = OFF  EX: 123 cycles left to maintenance 00 01 23
U3	Set WORKING CYCLES	00 = OFF  01 = 1000 cycles 02 = 2000 cycle 99 = 99000 cycles (max)
U4	Show INSTALLATION DATE	00 = OFF  day month year 10 08 18
U5	Set INSTALLATION DATE	00 = OFF  day month year 10 08 18
U6	Motor DIRECT COMMAND	o = OPEN c = CLOSE

SELF DIAGNOSTIC - Fault messages

--	Control unit ready to program	St	START
Fc	PHOTOCELL in Closing	Pd	PEDESTRIAN START
Fa	PHOTOCELL in Opening	rd	THE TRANSMITTER is compatible and can be saved
bC	SAFETY EDGE in Closing	A	OBSTACLE DETECTION operating
bA	SAFETY EDGE in Opening	Sd	SAVE settings
Sp	STOP - open contact. Close the contact		
00	MOTOR operating		QUICK ROTATION = normal operation SLOW ROTATION = slowdown

MAIN TABLE

	Display	Main Settings
A	AA	RADIO
	CC	PROGRAMMING
A	FF	MOTOR TORQUE/ OBSTACLE DETECTION
B	HH	FUNCTIONS
	LL	WORKING TIMES
	PP	SAFETY DEVICES
	UU	MAINTENANCE

4. PROGRAMMAING

4.1 **AA** RADIO Settings

The control unit can manage both fixed and rolling code transmitters: once the first transmitter has been recorded, the control unit will only accept that kind of radio code. Therefore if the radio code entered is fixed code, the control unit will recognize just fixed code transmitters and viceversa. **NO RESET POSSIBLE.**

The radio capacity can store **fill 99 different users.**

Press A and use to go to setting **AA**
 Press again A to select the RADIO MENU: the display shows **A_**
 Use to choose the setting you wish within the RADIO MENU.

A1 Recording a TRANSMITTER as START command

	Press one of the transmitter's key, the display shows: rd = radio compatible or 01 02 ... 99 = transmitter in storage	
1	Scroll to go to setting:	A1
2	Press and hold the transmitter and at the same time press A The display shows the radio code position.	01 02 ... 99 (max)
3	The display shows FL when memory is full	FL
Repeat step 1 and 2 to store any additional transmitter.		
4	Press B to return to previous setting, then press B again as many times as the display shows: or wait 20 seconds, to go out of the programming automatically.	Sd (setting saved)

A2 Recording a transmitter as PEDESTRIAN OPENING

Press one of the transmitter's key, the display shows:

rd = radio **compatible**

or

01 02 ... 99 = transmitter **in storage**

1	Scroll   to go to setting:	A2
2	Press and hold the transmitter and at the same time press A  The display shows the radio code position.	01 02 ... 99 (max)
3	The display shows FL when memory is full	FL
Repeat step 1 and 2 to record any additional transmitter as PEDESTRIAN OPENING.		
4	Press B  to return to previous setting, then press B  . again as many times as the display shows: or wait 20 seconds, to go out of the programming automatically.	Sd (setting saved)

A3 Recording a transmitter on SECOND RADIO CHANNEL



It is mandatory to plug the interface MRX02 into the according slot with power OFF

Press one of the transmitter's key, the display shows:

rd = radio **compatible**

or

01 02 ... 99 = transmitter **in storage**

1	Scroll   to go to setting:	A3
2	Press and hold the transmitter and at the same time press A  The display shows the radio code position.	01 02 ... 99 (max)
3	The display shows FL when memory is full	FL
Repeat step 1 and 2 to record any additional transmitter as SECOND RADIO CHANNEL.		
4	Press B  to return to previous setting, then press B  . again as many times as the display shows: or wait 20 seconds, to go out of the programming automatically.	Sd (setting saved)

A4

Deleting a single transmitter



To delete a single transmitter keep a full list of users.

1	Scroll to go to setting:	A4
2	Press to confirm	
3	Use to select the radio code to delete	01...0299
4	Hold for about 5 seconds until the display shows:	5d
5	Release . The control unit goes back to stand-by position	--
Repeat the procedure to delete any transmitter.		
6	Press to return to previous setting, then press again as many times as the display shows: or wait 20 seconds, to go out of the programming automatically.	5d (setting saved)



The TRANSMITTER POSITION DELETED will be subsequently available to save a NEW ONE.

A5

Deleting all transmitters at once

1	Scroll to go to setting:	A5
2	Press and hold for about 10 seconds until the display shows: All codes are now deleted	5d
3	Release . The control unit goes back to stand-by position	--
4	Press to return to previous setting, then press again as many times as the display shows: or wait 20 seconds, to go out of the programming automatically.	5d (setting saved)

1	Scroll   to go to setting:	A6
2	Press A  to confirm	
3	Use   to select the function:	<p>MONOSTABLE contact</p> <p>BISTABLE contact</p> <p>TIMER</p> <p>PILOT LIGHT</p> <p>COURTESY LIGHT</p> <p>MAGNETIC LOCK</p>
4	Press B  to return to previous setting, then press again B  as many times as the display shows: or wait 20 seconds, to go out of the programming automatically..	<p>01</p> <p>02</p> <p>03</p> <p>04</p> <p>05</p> <p>06</p>
		<p>5d (setting saved)</p>

01

MONOSTABLE contact

The contact CLOSES only when the transmitter is pressed.

02

BISTABLE contact

The contact CLOSES or OPENS each time the transmitter is pressed.

03

TIMER

The contact CLOSES when pressing the transmitter and remains closed during 90 seconds.

04

PILOT LIGHT when GATE IS OPENED

The contact CLOSES when the gate starts OPENING and OPENS only when reaching the CLOSING position, no matters if the gate STOPS during operation.

05

COURTESY LIGHT

The contact CLOSES when the gate starts OPENING and OPENS 90 seconds after reaching the CLOSING position.

4.2 PROGRAMMING

Press A  and scroll   to go to setting 
 Then press A  to go to PROGRAMMING: display shows 
 Use   to select the according setting.

4.2.1 Setting the Programming mode.

AUTOMATIC programming with OBSTACLE DETECTION feature

ATTENTION:

AUTOMATIC PROGRAMMING can only be performed with ground stops in Opening and Closing.

1	Scroll   to go to setting:	
2	<p>Press and hold A  for about 10 seconds.</p> <p>When starting the programming the gate:</p> <ul style="list-style-type: none"> • Closes till reaching the CLOSING limit switch (from any position). • Stops and starts opening till reaching the OPENING limit switch. • Stops briefly (about 3 sec.), then starts CLOSING, slowing down till reaching the CLOSING limit switch. <p> THIS OPERATION IS MANDATORY IN ORDER TO DETECT MOTOR ABSORPTION.</p>	
3	Now the control unit has saved automatically all working parameters and returns to stand-by position.	

N.B.:

If **OBSTACLE DETECTION** works uncorrect (stops + reverses) change the sensibility rate,  .

MANUAL setting of working times.



The obstacle detection gets automatically turned OFF.

ATTENTION:

The **SEQUENTIAL PROGRAMMING** can only be performed with ground stops in **Opening and Closing**.

SEQUENTIAL PROGRAMMING can be performed direct from or using a **transmitter** previously recorded.

1	Scroll go to setting:	C2
2	Press to confirm. Display shows:	n1
3	Make sure the gate is in CLOSING POSITION .	
4	Press the transmitter (or).The gate starts OPENING .	
5	At 90% of the opening cycle, press the transmitter (or), the gate starts slowdown till reaching the OPENING limit switch .	
6	The gate stops briefly (about 3 sec.), then starts CLOSING , slowing down till reaching the CLOSING limit switch . THIS OPERATION IS MANDATORY IN ORDER TO DETECT MOTOR ABSORPTION.	
7	Now the control unit has saved automatically all working parameters and returns to stand-by position.	

4.2.2 Return to default settings

The control unit is set with default working times and functions. If you wish to return to default settings follow the below procedure:

RESTORE FACTORY DATA (Default)

1	Scroll to go to setting :	C3
2	Press for about 5 seconds .	
3	Factory data are restored and display shows:	5d (setting saved)

4.2.3 Motor positioning (RH and LH)

C6

How to position the motor, RH or LH (see paragraph 3.1)

The control unit allows to switch electronically the motor direction, from **RH** (default) to **LH** as follows:

1	Scroll   to go to setting:	C6
2	Press A  to confirm.	
3	Scroll   to select:	<p>RH motor closing to LEFT (inner view) 00 (DEFAULT)</p> <p>LH motor closing to RIGHT (inner view) 01</p>
4	Press B  to return to previous setting, then press B  again as many times as display shows	5d (setting saved)
or wait 20 seconds, to go out of the programming automatically.		

4.2.4 Limit switch

C7

MAGNETIC / ELECTROMECHANICAL limit switch

The control unit allows to manage both **MECHANICAL** (NC contact) and **MAGNETIC** limit switches (NO contact)

1	Scroll   to go to setting:	C7
2	Press A  to confirm.	
3	Scroll   to select:	<p>MECHANICAL limit switch (NC) 00 (DEFAULT)</p> <p>MAGNETIC limit switch (NO) 01</p>
4	Press B  to return to previous setting, then press B  again as many times as display shows	5d (setting saved)
or wait 20 seconds, to go out of the programming automatically.		

4.3 FF MOTOR TORQUE / OBSTACLE DETECTION settings

Use this function to adjust the MOTOR TORQUE or the OBSTACLE DETECTION sensibility, AUTOMATIC PROGRAMMING only  .

Press A  and scroll   to go to setting  .

Press A  to go to setting  .

Use   to select the according function.

F3 TORQUE/OBSTACLE DETECTION adjustment

1	Scroll   to go to setting:	
2	Press A  to confirm. The display shows the OBSTACLE DETECTION rate set.	
3	Use   to adjust the sensibility value  OFF  MINIMUM  MAXIMUM	  ... 
4	Press B  to return to previous setting, then press B  again as many times as display shows or wait 20 seconds, to go out of the programming automatically.	 (setting saved)

N.B.:

If OBSTACLE DETECTION works uncorrect (stops + reverses) adjust  .

F5 SLOWDOWN speed

1	Scroll   to go to setting:	
2	Press A  to confirm. Press A to confirm. The display shows the SPEED set.	 
3	Use   to adjust the SLOWDOWN SPEED 
4	Press B  to return to previous setting, then press B  again as many times as display shows or wait 20 seconds, to go out of the programming automatically.	 (setting saved)



If SLOWDOWN speed has been changed, repeat the whole PROGRAMMING procedure

4.4 HH FUNCTIONS

Use this menu to TURN ON/OFF any special function.

00 = OFF function DEACTIVATED

01 = ON function ACTIVATED

Press **A**  and use   to go to setting **HH**

Press again **A**  to enter the menu: display shows **H_**

Use   to select the according setting.

H1 MULTI-OCCUPATION

This function gives priority to **OPENING**:

During the OPENING cycle, additional START commands will be ignored for all the duration of OPENING and COUNT DOWN.

1	Scroll   to go to setting:	H1
2	Press A  to confirm.	
3	Use   to turn:	Function OFF 00 Function ON 01
4	Press B  to return to previous setting, then press B  again as many times as display shows:	5d (setting saved)
or wait 20 seconds, to go out of the programming automatically.		

H2 PRE-BLINKING

This function activates a **pre-blinking during 4-5** seconds before any opening and closing cycle.

1	Scroll   to go to setting:	H2
2	Press A  to confirm.	
3	Use   to turn:	Function OFF 00 Function ON 01
4	Press B  to return to previous setting, then press B  again as many times as display shows:	5d (setting saved)
or wait 20 seconds, to go out of the programming automatically.		

The photocell test allows to check the good operation of the photocells at every opening and closing cycle.

1	Scroll   to go to setting:	H4
2	Press A  to confirm.	
3	Use   to turn:	Function OFF Function ON
		00 01
4	Press B  to return to previous setting, then press B  again as many times as display shows:	5d (setting saved)
	or wait 20 seconds, to go out of the programming automatically.	

PHOTOCELL TEST OPERATION

At every OPENING/CLOSING cycle, the control unit temporarily turns the power off from the photocell transmitter, to check the receiver relay performance.

If the check is successful and the relay contact exchange is correct (N.C. → N.O. → N.C.), the power is restored, for normal operation.

If a fault is detected the display shows **FE** (PHOTOCELL TEST FAILED).

By activating this function, the gate closes **1 second** after passing through the photocell beam in closing (once the opening cycle has been completed of course).

If the photocells are not involved, the gate will close according to the **AUTOMATIC CLOSING TIME** set.

1	Scroll   to go to setting:	H8
2	Press A  to confirm.	
3	Use   to turn:	Function OFF Function ON
		00 01
4	Press B  to return to previous setting, then press B  again as many times as display shows:	5d (setting saved)
	or wait 20 seconds, to go out of the programming automatically.	

HC**MOTOR TEST**

This function allows to check the good operation of the motor in **opening and closing**.

1	Scroll   to go to setting:	HC
2	Press A  to confirm.	
3	Use   to turn:	Function OFF 00 Function ON 01
4	Press B  to return to previous setting, then press B  again as many times as display shows:	5d (setting saved)
or wait 20 seconds, to go out of the programming automatically.		

HL**BLINKER TENSION**

This function allows to choose the blinker output tension.

1	Scroll   to go to setting:	HL
2	Press A  to confirm.	
3	Use   to set the output tension:	INTERMITTENT (Default) 00 FIXED 01
4	Press B  to return to previous setting, then press B  again as many times as display shows:	5d (setting saved)
or wait 20 seconds, to go out of the programming automatically.		

4.5 LL TIMES settings

This menu enables to set any **WORKING TIME**.

Press A  and scroll   to go to setting **LL**.

Press again A  to confirm, the display shows **L_**

Use   to select the according setting.



Working time adjustment has been excluded, since limit switches in **OPENING** and **CLOSING SET** the proper working time. However a default **SAFETY TIME** of 120 sec. has been included in case of gate uncorrect operation.

L3 AUTOMATIC CLOSING

This function enables to set the countdown for the **AUTOMATIC CLOSING**.

1	Scroll   to go to setting:	L3
2	Press A  to confirm.	
3	Use   to set the automatic closing time: Setting to 00 the automatic closing is turned OFF	00 (OFF) 01 ... 99
4	Press B  to return to previous setting, then press B  again as many times as display shows: or wait 20 seconds, to go out of the programming automatically.	5d (setting saved)

L4 PEDESTRIAN AUTOMATIC CLOSING

This function enables to set the countdown for the **PEDESTRIAN AUTOMATIC CLOSING**.

1	Scroll   to go to setting:	L4
2	Press A  to confirm.	
3	Use   to set the pedestrian automatic closing time Setting to 00 the function is turned OFF	00 01 ... 99 (max)
4	Press B  to return to previous setting, then press B  again as many times as display shows: or wait 20 seconds, to go out of the programming automatically.	5d (setting saved)

L7

SLOWDOWN

This function enables to set the SLOWDOWN time in **closing and opening**.

1	Scroll   to go to setting:	L7
2	Press A  to confirm.	
3	Use   to increase or decrease the slowdown time : Setting to  the slowdown is turned OFF	00(OFF) 01 (min) 10... (max)
4	Press B  to return to previous setting, then press B  again as many times as display shows: or wait 20 seconds, to go out of the programming automatically.	5d (setting saved)

L9

PEDESTRIAN OPENING

This function enables to set the **PEDESTRIAN OPENING time**.

1	Scroll   to go to setting:	L9
2	Press A  to confirm	
3	Use   to set the pedestrian opening working time:	01 (min) ... 25 (max)
4	Press B  to return to previous setting, then press B  again as many times as display shows: or wait 20 seconds, to go out of the programming automatically.	5d (setting saved)

4.6 PP SAFETY DEVICES

This menu helps setting and handling the **safety devices**.

Press A  and scroll   to go to menu 

then press A  to go to submenu 

Use   to select the according setting

P1 STOP emergency push button

1	Scroll   to go to setting:	P1
2	Press A  to confirm.	
3	Use   to turn the contact: OFF – stop button deactivated ON – stop button activated	00 01
4	Press B  to return to previous setting, then press B  again as many times as display shows: or wait 20 seconds, to go out of the programming automatically.	5d (setting saved)

P2 PHOTOCELL in CLOSING

1	Scroll   to go to setting:	P2
2	Press A  to confirm.	
3	Use   to turn the contact: OFF – photocell in closing deactivated ON – photocell in closing activated	00 01
4	Press B  to return to previous setting, then press B  again as many times as display shows: or wait 20 seconds, to go out of the programming automatically.	5d (setting saved)

P3 PHOTOCELL in OPENING

1	Scroll   to go to setting:	P3
2	Press A  to confirm.	
3	Use   to turn the contact: OFF – photocell in opening deactivated ON – photocell in opening activated	00 01
4	Press B  to return to previous setting, then press B  again as many times as display shows: or wait 20 seconds, to go out of the programming automatically.	5d (setting saved)

P4

SAFETY EDGE in CLOSING

1	Scroll   to go to setting:	P4
2	Press A  to confirm.	
3	Use   to turn the contact: OFF – safety edge in closing deactivated ON – MECHANICAL safety edge in closing activated (N.C.) ON – RESISTIVE safety edge in closing activated (8K2)	00 01 02
4	Press B  to return to previous setting, then press B  again as many times as display shows: or wait 20 seconds, to go out of the programming automatically.	

P5

SAFETY EDGE in OPENING

1	Scroll   to go to setting:	P5
2	Press A  to confirm.	
3	Use   to turn the contact: OFF – safety edge in opening deactivated ON – MECHANICAL safety edge in opening activated (N.C.) ON – RESISTIVE safety edge in opening activated (8K2)	00 01 02
4	Press B  to return to previous setting, then press B  again as many times as display shows: or wait 20 seconds, to go out of the programming automatically.	

4.7 **UU** MAINTENANCE and SERVICE SETTINGS

This menu displays all data and maintenance status of your electric gate.

Press A and scroll to go to main menu **UU**

then press A to go to **U_**

Use to select the according setting

U1 Cycles performed (no possibility of reset)

This feature shows **how many OPERATIONS** your gate performed.

1	Scroll to go to setting:	U1
2	Press A Display shows the number of complete cycles performed. ex: a control unit that performed 12573 cycles , the display will show 3 views in sequence <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> First view</div> <div style="text-align: center;"> Second view</div> <div style="text-align: center;"> Third view</div> </div>	
3	Press B to return to previous setting, then press B again as many times as display shows:	5d (setting saved)
or wait 20 seconds, to go out of the programming automatically.		

U2 Maintenance countdown

This feature shows **the number of cycles left to MAINTENANCE**

1	Scroll to go to setting:	U2
2	Press A <ul style="list-style-type: none"> If display shows 3 times maintenance countdown has not been set (default) if display shows 3 sequences like: <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> First view</div> <div style="text-align: center;"> Second view</div> <div style="text-align: center;"> Third view</div> </div> <p>It means 123 cycles are left to maintenance service.</p> <div style="border: 1px solid gray; padding: 5px; margin-top: 10px;"> When countdown comes to the end, the blinker flashes 5 times every 5 minutes, after every full operation, while the display shows proceed now to maintenance. </div>	00
3	Press B to return to previous setting, then press B again as many times as display shows:	5d (setting saved)
or wait 20 seconds, to go out of the programming automatically.		

U3**Setting maintenance recall**

This function enables to set the number of **CYCLES** to next maintenance service.

1	Scroll   to go to setting:	U3
2	Press A 	
3	Use   to set the desired number of cycles till next maintenance service. The number of cycles entered in U3 will be automatically transferred as well to setting U2 (cycles left to maintenance)	(1000 cycles) 01 (2000 cycles) 02 (55000 cycles) 55 (99000 cycles) 99
4	Press B  to return to previous setting, then press B  again as many times as display shows: or wait 20 seconds, to go out of the programming automatically.	5d (setting saved)

U4**Displaying installation date**

This function shows the **INSTALLATION DATE**.

1	Scroll   to go to setting:	U4
2	Press A  to confirm: • If display shows 3 times 00 installation date has not been set. • if display shows a view in 3 sequences, installation date has been set: 10 day 08 month 18 year	00
3	Press B  to return to previous setting, then press B  again as many times as display shows: or wait 20 seconds, to go out of the programming automatically.	5d (setting saved)

U5

Set installation date

This function enables to set **the date of first INSTALLATION**.

1	Scroll   to go to setting:	U5
2	Press  to confirm: If display shows 3 times  installation date has not been set	00
3	Use   to set the day and press  to confirm. Use   to set the month and press  to confirm. Use   to set the year and press  to confirm ex:  day  month  year	
4	Press  to return to previous setting, then press  again as many times as display shows: or wait 20 seconds, to go out of the programming automatically.	Sd (setting saved)

U6

Motor direct command

This function enables to check the **correct motor direction** and allows to reach electrically the **limit switches in Opening/Closing** without unlocking the motor.

1	Scroll   to go to setting:	U6
2	Press  to select	n1
3	Use   to.  →  OPEN while holding the key  CLOSE while holding the key	
4	Press  to return to previous setting, then press  again as many times as display shows: or wait 20 seconds, to go out of the programming automatically.	Sd (setting saved)

5. TROUBLE SHOOTING

The control unit is designed to display the most common faults.
Here below the fault table and possible solutions.

Fault	Probable cause	Solution
88 DISPLAY TURNED OFF	<ul style="list-style-type: none"> No tension. Fuses damaged. Transformer damaged. 	<p>Check the power supply.</p> <p>Find the cause and replace the fuse. Check wiring as well as in/out transformer's tension.</p>
FC PHOTOCELL CLOSING	<ul style="list-style-type: none"> Non-calibrated photocell. Obstacle in between. 	<p>Check the calibration between receiver and transmitter. Remove the obstacle and clean the lenses from dirt.</p>
	<ul style="list-style-type: none"> Incorrect wiring. Non-powered photocell. Disconnected photocell, disconnected output. 	<p>Check the wiring.</p> <p>Check the tension on the transmitter and receiver. Turn P2 OFF. (see paragraph 3.6.1)</p>
FA PHOTOCELL OPENING	<ul style="list-style-type: none"> Non-calibrated photocell Obstacle in between. 	<p>Check the calibration between receiver and transmitter. Remove the obstacle and clean the lenses from dirt.</p>
	<ul style="list-style-type: none"> Incorrect wiring. Non-powered photocell. Disconnected photocell, disconnected output. 	<p>Check the wiring.</p> <p>Check the tension on the transmitter and receiver. Turn P3 OFF. (see paragraph 3.6.2)</p>
FE PHOTOCELL TEST	<ul style="list-style-type: none"> Incorrect wiring. Non-compatible photocells. 	<p>Check the wiring.</p> <p>Use Proteco's photocells.</p>
bc SAFETY EDGE CLOSING	<ul style="list-style-type: none"> Safety edge disconnected. Incorrect wiring. Input disabled. 	<p>Check the wiring.</p> <p>Check the wiring.</p> <p>Turn P4 OFF.</p>
	<ul style="list-style-type: none"> Incorrect mode selection (MECHANICAL - RESISTIVE) Incorrect micro adjustment. 	<p>Check the safety edge type and set P4 accordingly.</p> <p>Adjust the inox wire tension.</p>
ba SAFETY EDGE OPENING	<ul style="list-style-type: none"> Disconnected safety edge. Incorrect wiring. Input disabled. 	<p>Check the wiring.</p> <p>Check the wiring.</p> <p>Turn P5 OFF.</p>
	<ul style="list-style-type: none"> Incorrect mode selection (MECHANICAL - RESISTIVE) Incorrect micro adjustment. 	<p>Check the safety edge type and set P5 accordingly.</p> <p>Adjust the inox wire tension.</p>
SP STOP PUSH BUTTON	<ul style="list-style-type: none"> Disconnected button. 	<p>Check the stop button wiring or turn P1 OFF. (see paragraph 3.5)</p>
	<ul style="list-style-type: none"> Incorrect wiring. 	<p>Check the wiring. (paragraph 3.5)</p>
St START COMMAND	<ul style="list-style-type: none"> Permanent start command. 	<p>Check the good operation of all devices connected to START (contact N.O.) (see paragraph 3.3).</p>
Pd PEDESTRIAN COMMAND	<ul style="list-style-type: none"> Pedestrian start command. 	<p>Check the good operation of all devices connected to PEDESTRIAN START (contact N.O.) (see paragraph 3.4).</p>
NE MOTOR TEST	<ul style="list-style-type: none"> Disconnected motor. Incorrect wiring. Capacitor damaged. 	<p>Wire the motor according to the wiring table.</p> <p>Check motor wiring (paragraph 3.1).</p> <p>Use a tester to check the stator's tension.</p>
	<ul style="list-style-type: none"> Limit switch in opening/closing failed Broken contacts. 	<p>Replace the limit switch</p> <p>Check the limit switch wiring</p>
rd PERMANENT RADIO SIGNAL	<ul style="list-style-type: none"> Unknown TRANSMITTER not in memory. 	<p>Check the transmitter's keys.</p> <p>If a key sticks, the transmitter led remains on and fixed. Remove the transmitter's battery and make sure the fault disappears from display.</p>
	<ul style="list-style-type: none"> Permanent start command from an existing transmitter. 	<p>Check the transmitter's keys.</p> <p>If a key sticks, the transmitter led remains on and fixed. Remove the transmitter's battery and make sure the fault disappears from display.</p>
01 02 ... 50 ... 99		
U3 COUNTDOWN COMPLETED blinker flashes every 5 sec.	<ul style="list-style-type: none"> Proceed to maintenance service. 	<p>Reset the maintenance service.</p>

6. DISPOSAL



Do not pollute the environment

Some electronic components may contain polluting substances.

Ensure materials are passed to the authorised collection centres, according to the laws and the regulations on force, for safe disposal.