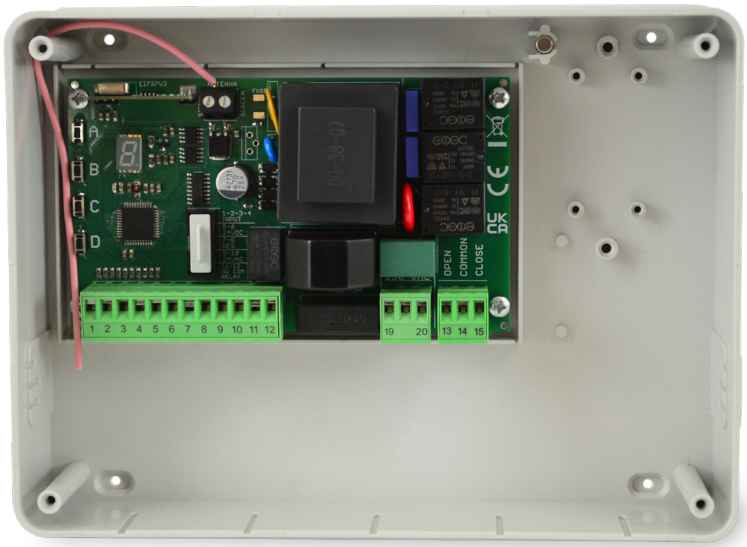
CONTROL UNIT FOR ROLLING SHUTTERS 230V

PROTECO GATE AUTOMATIONS

Installation and user manual

Q46



Control unit for rolling shutters 230Vac

- Programming display
- NC and NO contacts for accessories' connection
- Stop function by remote control
- Courtesy light: adjustable time, additionally it can be activated by remote control
- Input for closing photocell or 8K2Ω safety edge
- Dead man function in opening and closing, it can be activated by remote control
- Flashing light or courtesy light 24v or 230V
- NC safety contacts can be deactivated by menu
- Integrated radio receiver, 100 users storage capacity, codes can be cancelled individually
- Possibility of wiring a timer.

TECHNICAL FEATURES

Item	Q46
Control unit dimensions	136x78x35 mm
Plastic box dimensions	218x157x68 mm
Supply voltage	230V 50Hz
Supply voltage tolerance	± 15%
Integrated radio receiver	433 Mhz
Maximum absorption	5 A
Absorption in Stand-by	20 mA
Rated power	1200 W
Main fuse 230V	5 A @ 230V
Self-restoring fuse 24V	0,50 A
Flashing light power supply	24 Vac, 5W
Power supply accessories	24 Vac/Vdc, 5W
Working time	From 10 to 95 seconds
Automatic closing	From 5 to 95 seconds
Working temperature	-20 +60 °C
IP protection	IP55

1. WARNINGS

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 ⚠

⚠ The construction and installation of automatic gates and barriers must be carried out in compliance with the Machinery Directive 2006/42/EC and the EN 12453 standard, and must be performed by qualified personnel.

⚠ Make sure the grounding connection is state of the art before wiring the automation system; the electric plant must be equipped with a cut device and well protected against overvoltage.

For safety reasons do not install within inflammable gas areas and areas with high electromagnetic interferences.

⚠ Before playing with the system, switch the power off.

Once installation is complete, do not let children get in touch with packaging and waste materials (cardboard, plastic, metal parts, etc.) since they are potentially harmful.

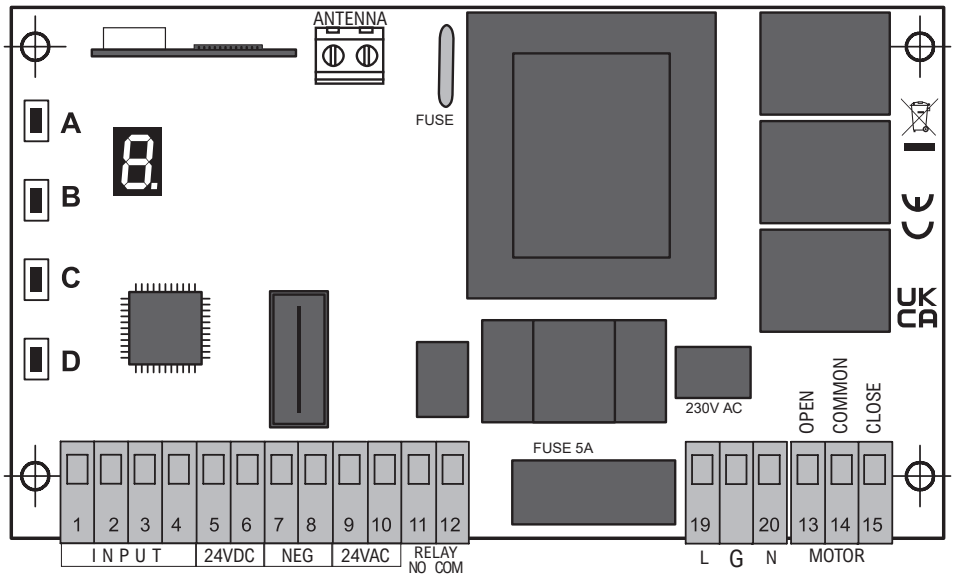
Use only original spare parts for maintenance.

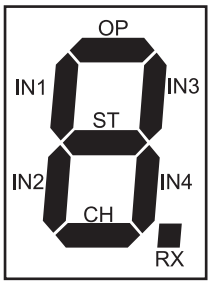
Do not take any change to the automation system components.

Proteco S.r.l. declines all liability for using additional components or non-original spare parts.

Proteco S.r.l. reserves the right to make changes to the product without prior notice.

2. DIAGRAM AND DESCRIPTION OF COMPONENTS





INPUT STATUS	
IN1 Iput 1	**RX radio led** Sending a signal from an existing remote: the led light flashes quickly. Sending a signal from an non-existent remote: the led light remains fixed. Holding **KEY D + existing remote control** the associated function from 1 to 5 is shown. **KEY C** allows to store remotes as **START** command without entering the menu (1)
IN2 Iput 2	
IN3 Iput 3	
IN4 Iput 4	
OP door opening	
ST door in STAND BY	
CH door closing	

INPUTS - LED LEGENDA

Each input onboard the control unit is associated to a LED
IN1 – Led input: 1 – Contact: NO – Functions: START – OPEN – DEAD MAN
IN2 – Led input: 2 – Contact: NC – Functions: DEACTIVATED – STOP – PHOTOCELL
If input 2 is deactivated, the LED remains OFF (MENU B – setting F position n= n).
IN3 – Led iput: 3 – Contact: NC / 8K2– Functions: PHOTOCELL – DEACTIVATED – SAFETY EDGE 8k2
If input 3 is deactivated, the LED remains OFF (MENU B – setting F - position 8 = n) .
IN4 – Led input: 4 – Contact: NO – Functions: FLASHING LIGHT ON/OFF – CLOSE – DEAD MAN CLOSING

REMOTE CONTROLS - QUICK STORAGE

Hold **KEY C:** display shows n. After 2 seconds the display turns off.
Press and hold **KEY C** together with the remote key you wish to save**.** If storage is successfull the display shows y and the led **RX** flashes quickly. The remotes are saved as START 1 command .

RETURN TO DEFAULT SETTINGS

Press once **KEY B:** the display shows C . Press **C** several times to select setting 8
Press and hold **D** : the display shows y flashing. When the display turns off default settings have been restored.
Release **D**. The default settings will be as follows:

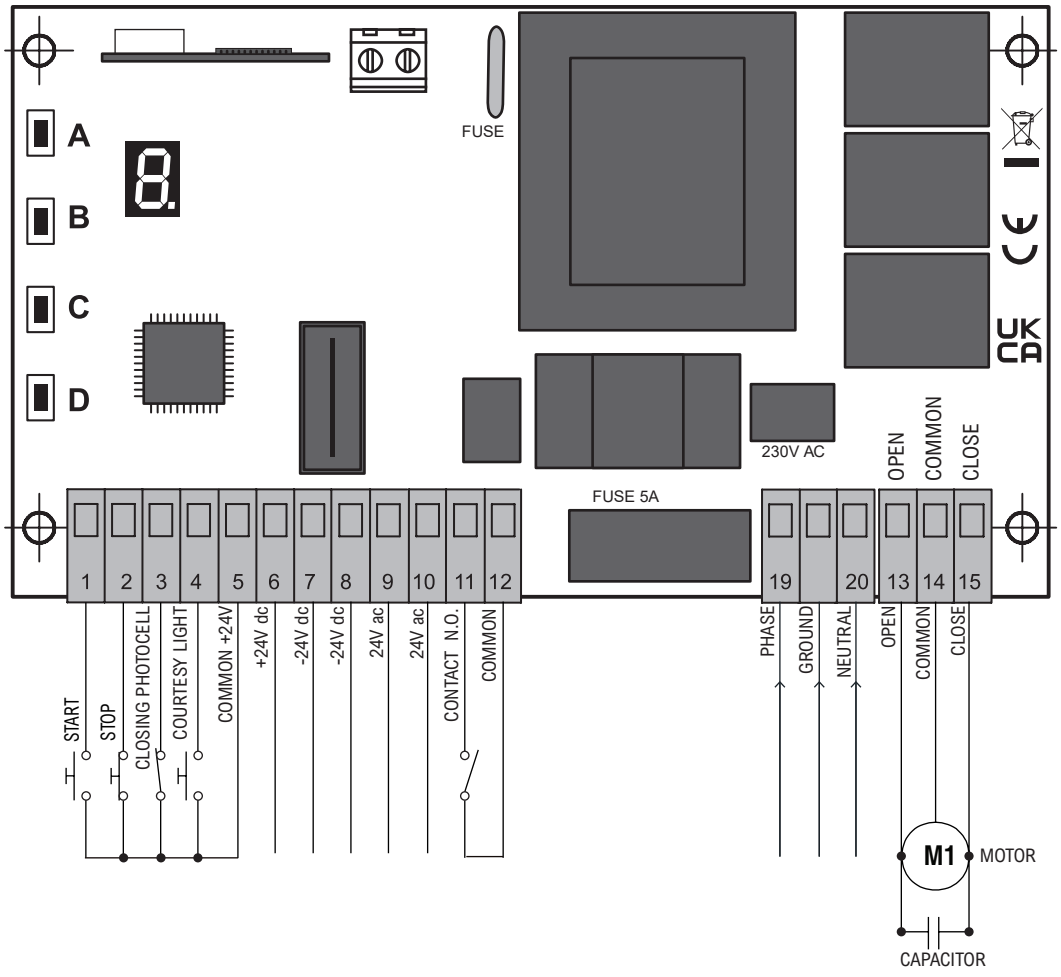
DEFAULT SETTINGS

A = 3 **30 SECONDS**
C = n **AUTOMATIC CLOSING OFF:** the door remains in opening position.
E = y **FLASHING LIGHT**
F1 = n **INPUT 1 SET AS START COMMAND**
F2 **DEACTIVATED:** the parameter will not be shown inside the menu
F3 = n **INPUT 3 SET AS PHOTOCELL**
F4 = n **INPUT 4 SET AS COURTESY LIGHT DURING 3 MINUTES**
F5 = y **STEP-BY-STEP**
F6 = n **STANDARD WORKING MODE**
F7 = n **INPUT 2 DEACTIVATED**
F8 = y **INPUT 3 ACTIVATED**

HOW LEDs OP-ST-CH WORK

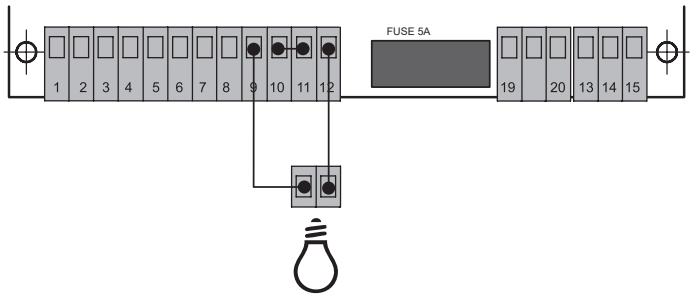
STATUS	OP	ST	CH
STAND BY: the shutter is fully in closing position, **ST** is ON, **OP** and **CH** are OFF.	OFF	ON	OFF
AUTOMATIC CLOSING: **ST** flashes, shutter is fully in opening position and will automatically close when the countdown is completed.	OFF	flashing	OFF
OPENING: the shutter opens, **OP** is on, **ST** and **CH** are OFF.	ON	OFF	OFF
CLOSING: the shutter closes, **CH** is on, **ST** and **OP** are OFF.	OFF	OFF	ON
STOP IN OPENING: the shutter has been stopped during opening. A start signal will give a closing command. **ST** and **CH** are on while **OP** is off.	OFF	ON	ON
STOP IN CLOSING: the shutter has been stopped during closing. A start signal will give an opening command. **ST** and **OP** are on while **CH** is off.	ON	ON	OFF

3. WIRING DIAGRAM



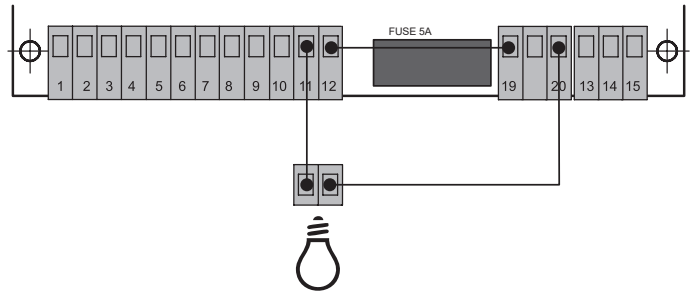
HOW TO WIRE ACCESSORIES

Courtesy light/Flashing light 24 vac Max 5 W:



FLASHING LIGHT / ACCESSORIES power supply:
Flashing light and accessories power supply is common.
Maximum current allowed is 500 mA. (about 10W)

Courtesy light/Flashing light 230 VAC. Max 100W.



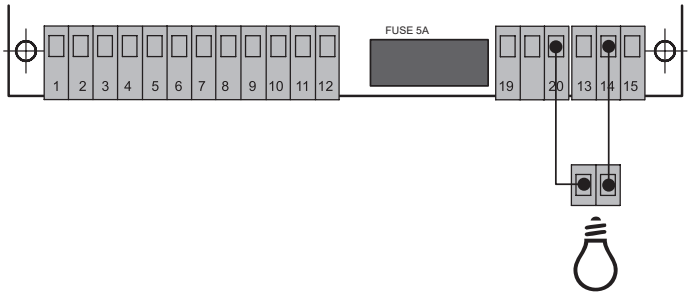
Use setting E to confirm the accessory mode.
Press 3 times **A** to go to E and use **C/D.**
Available settings: n - y - 1 - 2 - .... - 9

n Flashing light - fixed light mode

y Flashing light - blinking light mode (Quick during opening, slow during closing, fixed during automatic closing countdown)

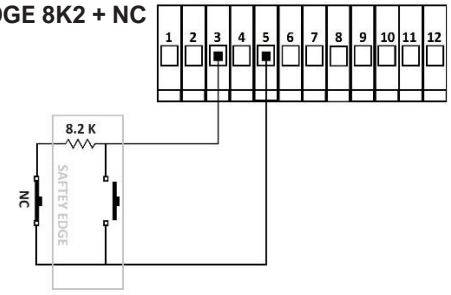
1 to 9 Courtesy light time expressed in minutes

In combination with the courtesy light it is possible to connect a warning light 230 VAC that turns on during operation, wire in paralel to the motor.
The below wiring allows to have a permanent light on during opening and closing.



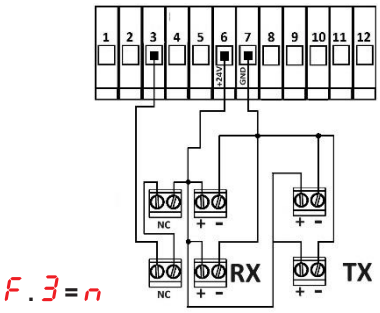
Press B, go to menu F , choose settings between 1 - 4 to configurate inputs

SAFETY EDGE 8K2 + NC



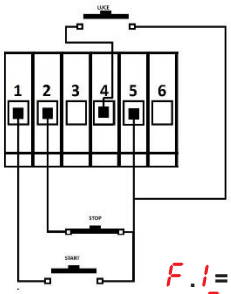
F.3=y

DOUBLE PHOTOCELL SET IN SERIES



F.3=n

START-STOP- WARNING LIGHT



F.1=n
F.2=n
F.4=n

Inputs 2 and **3** can be deactivated, setting F.7 = n (input 2) and F.8 = n (input 3).

Inputs 1 and **4** can be associated to **OPEN** and **CLOSE** functions respectively.

Set F.1 = y (INPUT 1 = OPEN)
Set F.4 = y (INPUT 4 = CLOSE)

4 KEY A – MENU A

Times / Courtesy light / Flashing light

Select the following parameters by repeatedly pressing the **KEY A**

A : WORKING TIME (press once A)

From 10 to 95 seconds: to increase the time press **C** (+ 5 seconds) to reduce press **D** (-5 seconds).
If display shows 1, the working time is set to 10 seconds.
If display shows 1 blinking, the working time is set to 15 seconds and so on.

How to change the working time - ex. from 20 to 30 seconds

1. Press **A** 1 time.
2. The display shows A.
3. After some seconds the display shows 2 (20 seconds working time).
4. Press **C** to increase of 5 seconds.
5. The display flashes 2 the working time is set to 25 seconds.
6. Press **C** to increase of another 5 seconds.
7. The display shows 3 the working time is set to 30 seconds.

C : AUTOMATIC CLOSING TIME (press twice A)

This parameter is not displayed if DEAD MAN function is set, F.6 = Y.
The automatic closing time can be programmed from 5 to 95 seconds, to increase the value press **C** (+ 5 seconds) to reduce press **D** (-5 seconds).
If display shows 1, the working time is set to 10 seconds.
If display shows 1 blinking, the working time is set to 15 seconds and so on.
Beyond 9, the display flashes n, the automatic closing function is deactivated.
When the display flashes 0, the value set is 5 seconds.

How to deactivate the automatic closing - example:

1. Press **A** 2 times.
2. The display shows C.
3. After some seconds the display flashes 1 (15 seconds).
4. Press **C** to increase 5 seconds or **D** to decrease 5 seconds.
5. Press **C** as many times as display shows n, the automatic closing is deactivated, the shutter after completing the opening cycle will remain in open position.

E : FUNCTION RELAY (press 3 times A)

Valori programmabili : n – Y – 1 – 2 – … – 9
n Flashing light - fixed light mode
Y Flashing litght - intermittent light mode
From 1 to 9 - Courtesy light time expressed in minutes

1. Press **A** 3 times.
2. The display shows E.
3. After some seconds the display shows 1 (1 minute)
4. Press **C** to scroll up to next option or **D** to return back.

H : DELAYED START (press 4 times A)

This function can be set from 0 to 9 seconds.
The shutter will be started H seconds later.

5 KEY B – MENU B :

Remote controls – Functions – Programming

U : REMOTE CONTROL - functions

(PRESS 1 TIME KEY B)

Press **B** to select menu U.
Press **C** to select the function between 1 and 7.
Press **D** to change/confirm the selection.

1 - 5 STORING A REMOTE CONTROL

Press **B** one time, the display shows U.
Use **C** to select the desired function between 1 and 5.
Set the function: PRESS and HOLD the remote control key and press **D**.
The display shows Y and the **RX** light flashes quickly, the storage has been successfully completed.

1 STORING A REMOTE CONTROL as START command

The remote control will not work if **DEAD MAN** function is set F.6 = Y
F.6 = Y .

2 STORING A REMOTE CONTROL as STOP command

3 STORING A REMOTE CONTROL as DEAD MAN opening command

Set F.6 = Y to activate the **DEAD MAN function** using your remote.

If F.6 is set to = n , the remote control will work normally as regular OPENING command.

4 STORING A REMOTE CONTROL as DEAD MAN closing command

Set F.6 = Y to activate the **DEAD MAN function** using your remote.

If F.6 is set to = n the remote control will work normally as regular CLOSING command.

5 STORING A REMOTE CONTROL as COURTESY LIGHT function for 3 MINUTES / OFF

If you set this configuration remotes will turn the courtesy light on/off.
Courtesy light turns off after **3** minutes.
If the flashing light mode is activated (E = n o Y) remotes as function 5 will remain invalid.

6 DELETING A SINGLE REMOTE CONTROL

Press **B** one time, the display shows U.
Select setting 6 pressing **C** several times. Press and hold the remote control key previously stored, the display shows Y and the led RX flashes quickly.
Press and hold **D** and the remote control key you need to delete.
The display shows n and the led **RX** remains fixed, the remote control has been deleted.

7 DELETING ALL REMOTE CONTROLS

Press **B** one time, the display shows U.
Select setting 7 pressing **C** several times.
Press and hold **D**, the display flashes showing Y. When the display shows Y still, remotes have been deleted.

F MAIN FUNCTIONS (PRESS TWICE B TO ENTER THE MENU)

Press **B** to get menu F.
Press **C** to select the function: 1 ,2 , … , 8.
Press **D** to alter the function.

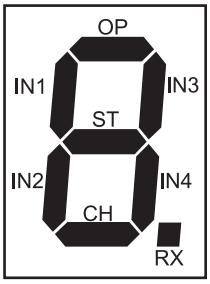
1 CONFIGURATION INPUT 1 - N.O. contact	**n = START**	**y = OPEN**
If you set **input 1 to** n = **START**. If you set **to** y = **OPEN**.		
2 CONFIGURATION INPUT 2 - N.C. contact	**n = STOP**	**y = PHOTOCELL**
If you set **input 2 to** n = **STOP**. If you set **to** y = **PHOTOCELL**. If the input is not activated it will not be visible in the menu. (menu F has to be set as 7 = n)		
3 CONFIGURATION INPUT 3 - N.C. contact - 8K2	**n = PHOTOCELL**	**y = 8K2 SAFETY EDGE**
If you set **input 3 to** y = **PHOTOCELL**. If you set **to** n = **8k2 SAFETY EDGE.** If the input is not activated it will not be visible in the menu. (menu F has to be set as 8 = n)		
4 CONFIGURATION INPUT 4 - N.O. contact	**n = COURTESY LIGHT**	**y = CLOSE**
4 = n : Courtesy light activated during 3 **minutes.** The **RELAY**wired to terminals **11-12 has to be OFF.** 4 = y : CLOSE command is activated.		
5 STEP BY STEP	**y = ON**	**n = OFF**
4 = n : A START command during opening stops the cruise. A START command during closing reverts the cruise to opening. 4 = y : A START command during opening or closing stops the cruise. The following START command reverts the cruise to the opposite direction.		
6 DEAD MAN	**y = ON**	**n = OFF**
6 = y : **DEAD MAN** function is activated. **Input 1** is set as **DEAD MAN in OPENING** **Input 4** is set as **DEAD MAN in CLOSING** The remote control saved in menu C.3 works as **DEAD MAN in OPENING** The remote control saved in menu C.4 works as **DEAD MAN in CLOSING** 6 = n : STANDARD mode is activated. **Input 1** is set as per menu F setting 1 **Input 4** is set as per menu F setting 4 The remote control saved on menu C.3 will **OPEN** The remote control saved on menu C.4 will **CLOSE** If **dead man function is activated** F.6 = y all the remaining settings of this menu won't be displayed. The shutter will open and close for the maximum time determined by setting A. Remotes saves as C.1 **START** command will be ignored. Settings P and L won't be displayed.		
7 INPUT 2 ACTIVATED / DEACTIVATED	**y = ON**	**n = OFF**
7 = y : input 2 is **ACTIVATED**. 7 = n : input 2 is **DEACTIVATED.** On menu F setting 2 won't be displayed.		
8 INPUT 3 ACTIVATED / DEACTIVATED	**y = ON**	**n = OFF**
8 = y : input 3 is **ACTIVATED**. 8 = n : input 3 is **DEACTIVATED.** On menu F setting 3 won't be displayed.		

6 PROGRAMMING - WORK TIMES

P HOW TO SET WORK TIMES

(PRESS 3 TIMES **B**)

If dead man function is activated, F.6 = Y, this setting won't be displayed.
Before selecting P make sure Led lights are off. This procedure allows to set work and pause times. Before starting make sure the shutter is in closing position.



PROGRAMMING - MODE 1

A = this setting schedules the work time.
C = this setting schedules the pause time.
Once programming is completed, it is still possible to alter settings if necessary.

1. Press 3 times **B** to select setting P.
2. After 2 seconds **ST+OP+CH** leds turn on.
3. Press and hold **C**, **ST+OP+CH** leds flash.
   After 2 seconds the shutter opens and **OP led** turns on.
   Release **C**.
4. When the shutter is in full opening position press **C**. Work time A is saved, **ST led** flashes, and the **AUTOMATIC CLOSING TIME** starts counting.
5. Press **C** to end the programming, the automatic closing time is scheduled and the shutter starts closing.

N.B.:
PROGRAMMING 1 can be started using the remote control stored as **START** 0.1 function or direct from input 1 set as **START** command F.1 = n.

PROGRAMMING - MODE 2

A = this setting schedules the work time.
C = n this setting deactivate the automatic closing.
Once programming is completed, it is still possible to alter settings if necessary.

1. Press 3 times **B** to select setting P
2. After 2 seconds **ST+OP+CH** leds turn on.
3. Press and hold **D, ST+OP+CH** leds flash.
   After 2 seconds the shutter opens and **OP led** turns on.
   Release **D**.
4. When the shutter is in full opening position press **D**. Work time A is saved.
   Automatic closing is deactivated C = n .
   Programming is completed.

7. DISPOSAL

DO NOT DISPOSE OF IN NATURE!

Some electronic components may contain pollutants.
Dispose of the materials through the designated collection centers and in compliance with the regulations in force at a local level.

COMPLIANCE DECLARATION CE

MANUFACTURER: PROTECO S.r.l

ADDRESS: Via Neive, 77 – 12050 Castagnito (CN) – ITALIA

declares that
THE PRODUCT: Control unit for rolling shutters 230V Q46
MODELS: PQ46Z

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.

The product also complies with EU 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.
These products have been tested in a typical homogeneous configuration.

Marco Gallo
CEO

Castagnito, January 27th 2025

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