User Manual v01.0.1-20260701

APC-able.ev01

230V CONTROL PANEL FOR SWING GATES AUTOMATION

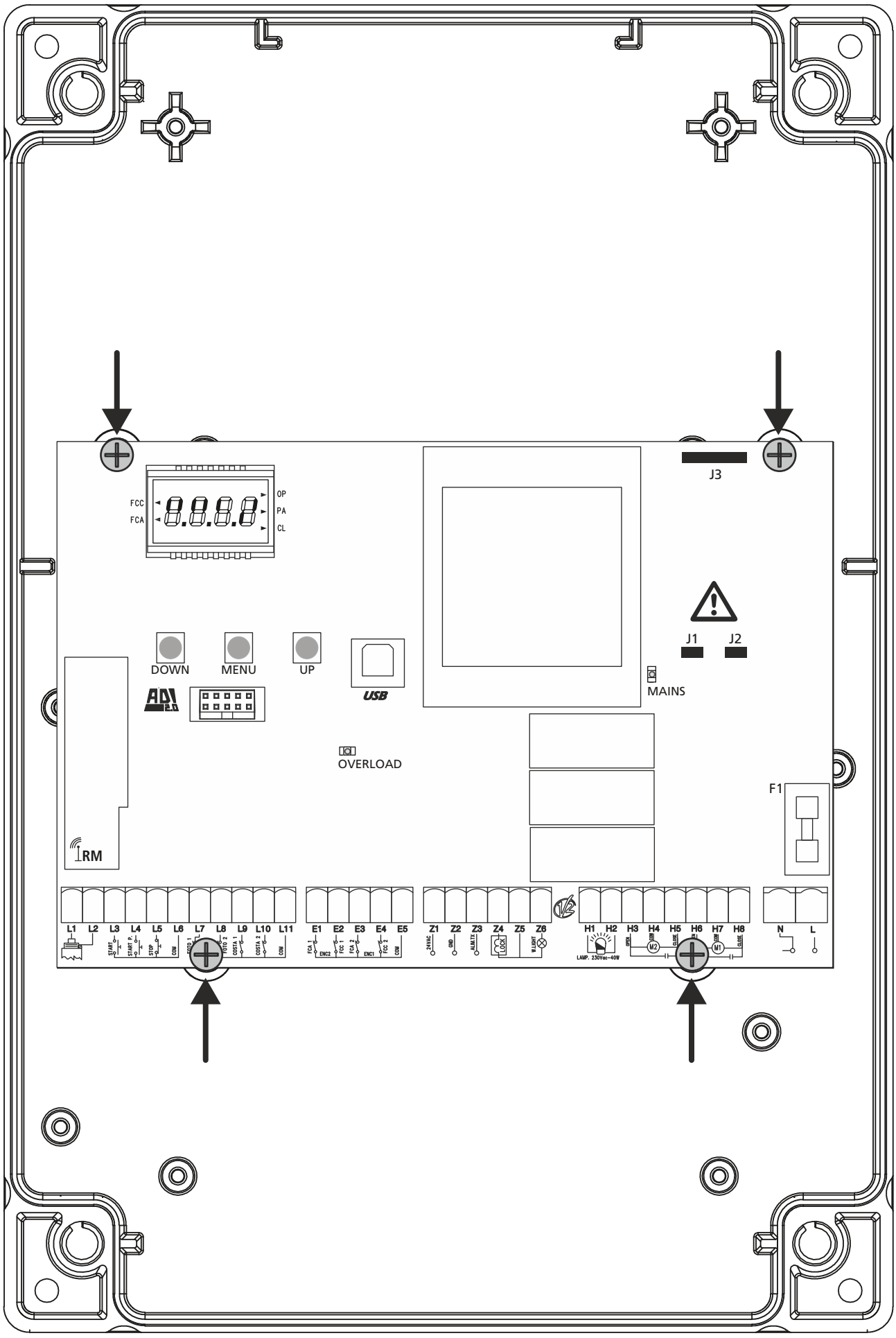


Attention Installer

The manual should be read cover to cover at least once prior to beginning installation

MADE IN ITALY

FIXING


FCC
FCA
OP
PA
CL
J3
J1
J2
DOWN
MENU
UP
USB
MAINS
OVERLOAD
F1
RM
L1 L2 L3 L4 L5 L6 L7 L8 L9 L10 L11
E1 E2 E3 E4 E5
Z1 Z2 Z3 Z4 Z5 Z6
H1 H2 H3 H4 H5 H6 H7 H8
N L

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1 - IMPORTANT REMARKS

For any installation problem please contact our Customer Service at the number +39-0172.812411 operating Monday to Friday from 8:30 to 12:30 and from 14:00 to 18:00.

V2 has the right to modify the product without previous notice; it also declines any responsibility to damage or injury to people or things caused by improper use or wrong installation.

Please read this instruction manual very carefully before installing and programming your control unit.

- This instruction manual is only for qualified technicians, who specialize in installations and automations.
- The contents of this instruction manual do not concern the end user.
- Every programming and/or every maintenance service should be done only by qualified technicians.

AUTOMATION MUST BE IMPLEMENTED IN COMPLIANCE WITH THE EUROPEAN REGULATIONS IN FORCE:

EN 60204-1 (Machinery safety. electrical equipment of machines, part 1: general rules)

EN 12453 (Safe use of automated locking devices, test methods, requirements)

- The installer must provide for a device (es. magnetotermical switch) ensuring the omnipolar sectioning of the equipment from the power supply. The standards require a separation of the contacts of at least 3 mm in each pole (EN 60335-1).
- After making connections on the terminal board, use one hose clamp to fix dangerous voltage wires near the terminal board and another hose clamp to fix safety low voltage wires used for accessories connection; this way, in case of accidental detachment of a conducting wire, dangerous voltage parts will not come into contact with safety low voltage ones.
- The plastic case has an IP55 insulation; to connect flexible or rigid pipes, use pipefittings having the same insulation level.
- Installation requires mechanical and electrical skills, therefore it shall be carried out by qualified personnel only, who can issue the Compliance Certificate concerning the whole installation (EEC Directive 2006/42/CE, Annex IIA).
- The automated vehicular gates shall comply with the following rules: EN 12453, EN 12978 as well as any local rule in force.
- Also the automation upstream electric system shall comply with the laws and rules in force and be carried out workmanlike.
- The door thrust force adjustment shall be measured by means of a proper tool and adjusted according to the max. limits, which EN 12453 allows.
- We recommend to make use of an emergency button, to be installed by the automation (connected to the control unit STOP input) so that the gate may be immediately stopped in case of danger.
- Always remember to connect the earth according to current standards (EN 60335-1, EN 60204-1).



2 - DISPOSAL

As for the installation operations, even at the end of this product's life span, the dismantling operations must be carried out by qualified experts.

This product is made up of various types of materials: some can be recycled while others need to be disposed of.

Find out about the recycling or disposal systems envisaged by your local regulations for this product category.

Important! – Parts of the product could contain pollutants or hazardous substances which, if released into the environment, could cause harmful effects to the environment itself as well as to human health.

As indicated by the symbol opposite, throwing away this product as domestic waste is strictly forbidden. So dispose of it as differentiated waste, in accordance with your local regulations, or return the product to the retailer when you purchase a new equivalent product.

Important! – the local applicable regulations may envisage heavy sanctions in the event of illegal disposal of this product.

3 - EU DECLARATION OF CONFORMITY

The manufacturer V2 S.p.A., headquarters in Corso Principi di Piemonte 65, 12035, Racconigi (CN), Italy

Under its sole responsibility hereby declares that the products:
CX EVO1

comply with the following directives:
- 2014/30/UE (EMC Directive)
- 2014/35/UE (Low Voltage Directive)
- RoHS-3 2017/2102

Furthermore, the product complies with the following standards:
EN IEC 61000-6-2:2019, EN IEC 61000-6-3:2021
IEC 60335-1:2020

Racconigi, 01/03/2024
V2 S.p.A. legal representative.
Roberto Rossi



4 - TECHNICAL SPECIFICATIONS

	CX EVO1
Power supply	230V / 50Hz
Max motors load	2 x 700W
Duty cycle	40%
Consumption in stand-by (with LOW ENERGY module installed)	0,45 W
Max accessories load 24V	10W
Protection fuse	5A
Weight	1600 g
Dimensions	312 x 210 x 100 mm
Working temperature	-20 ÷ +60°C
Protection	IP55

	CX EVO1-120V
Power supply	120V / 60Hz
Max motors load	2 x 500W
Duty cycle	30%
Consumption in stand-by (with LOW ENERGY module installed)	0,45 W
Max accessories load 24V	10W
Protection fuse	8A
Weight	1600 g
Dimensions	312 x 210 x 100 mm
Working temperature	-20 ÷ +60°C
Protection	IP55

5 - DESCRIPTION OF THE CONTROL UNIT

The digital control unit CX EVO1 is an innovative V2 product that guarantees a safe and reliable automation of leaf swing or sliding gates.

CX EVO1 is provided with a display that, not only makes programming simple, but also allows a continuous monitoring of the input statuses; in addition, thanks to a menu structure, the working schedule and the operation logic can be set easily.

In compliance with the European standards concerning electrical safety and electromagnetic compatibility (EN 60335-1,
EN 50081-1 and EN 50082-1) it has been equipped with the low voltage circuit total electric insulation (motors included) from the network voltage.

Other characteristics:

- Automatic control for the null current relay switch
- Allows to control ENCODER-equipped 230V motors
- Power adjustment with independent wave shutting on both the two motors
- Obstacle detection by means of monitoring start condenser voltage
- Automatic learning of the operation time
- Operation by means of mechanical ends of stroke connected to the gearcase or connected in series to the motor
- Tests for safety devices (photocells, safety edges and triacs) before each opening (as required by the referred regulations)
- Deactivation of safety inputs through the configuration menu: no jumper is required for terminals concerning safety devices that have not been installed, yet. You will only need to disable this function from its relevant menu
- Control unit programming can be locked through the optional CL512K key
- ADI connector for the advanced management of the ADI devices.
- Connector for the LOW ENERGY module that allows saving electrical energy: when the gate is standing the LOW ENERGY module deactivates the display, the photocells and all the devices power supplied by a terminal box.
  To activate the operation of the module, it is necessary to activate the ENERGY SAVING function (parameter EnSA = Si).

5.1 - ELECTRIC CONNECTIONS

WARNING: The installation of the unit, safety devices and accessories must be carried out when the power supply is disconnected

BEFORE PROCEEDING WITH THE ELECTRICAL CONNECTIONS, READ CAREFULLY THE CHAPTERS DEDICATED TO THE INDIVIDUAL DEVICES AVAILABLE IN THE PAGES THAT FOLLOW.

L1	Antenna
L2	Antenna shielding
L3	START - Opening control for the connection of control devices with N.O. contact
L4	START P. - Opening controls for pedestrian access for the connection of control devices with N.O. contact
L5	STOP - Stop command. N.C. contact
L6	Common (-)
L7	FOT1 - Photocells type 1. N.C. contact
L8	FOT2 - Photocells type 2. N.C. contact
L9	COS1 - Safety edges type 1. N.C. contact
L10	COS2 - Safety edges type 2. N.C. contact
L11	Common (-)

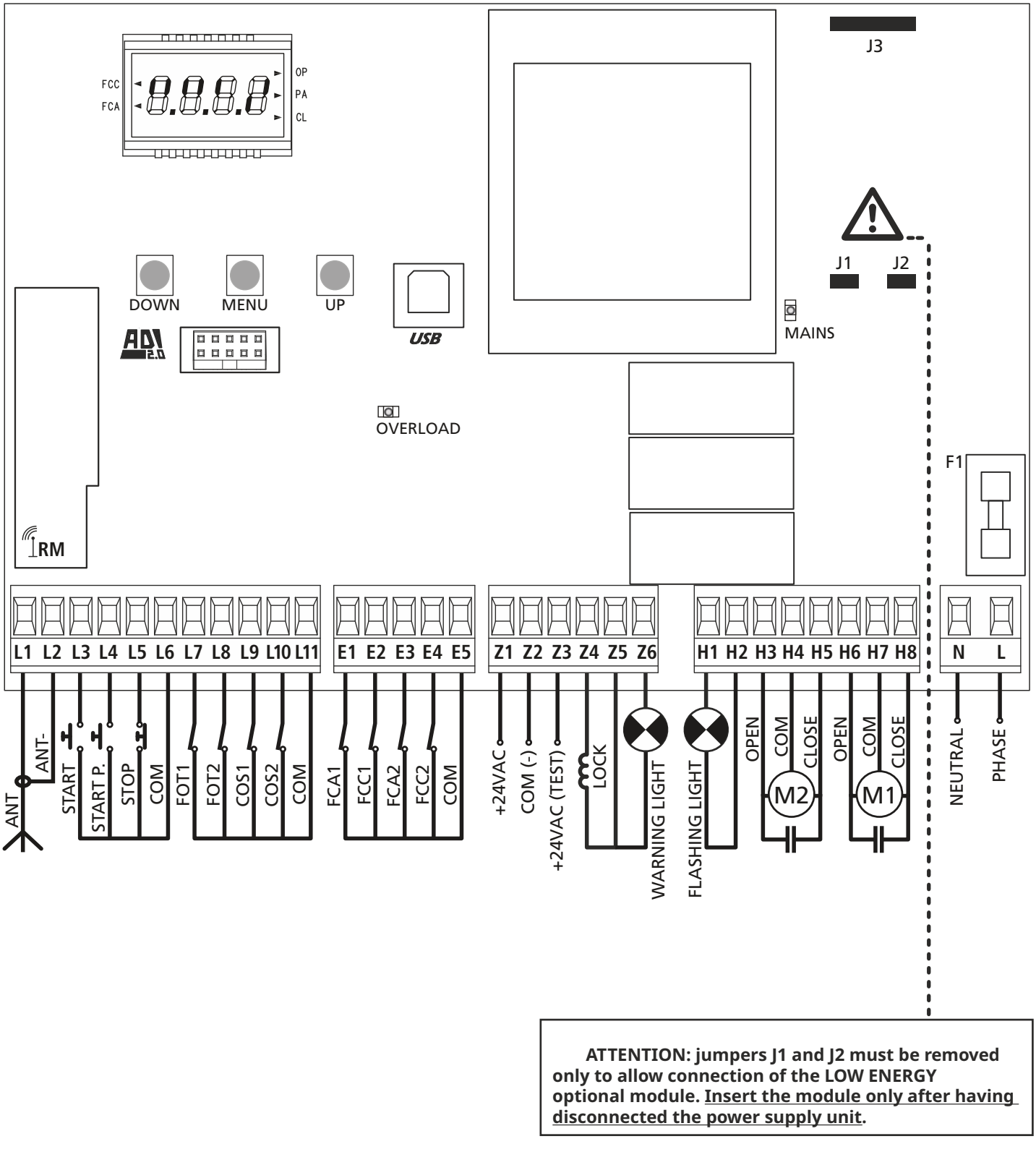
E1	FCA1 - Open limit switch motor M1	Encoder motor M2
E2	FCC1 - Close limit switch motor M1	
E3	FCA2 - Open limit switch motor M2	Encoder motor M1
E4	FCC2 - Close limit switch motor M2	
E5	Common (-)	

Z1	Power output 24 Vac for photocells and other accessories
Z2	Common for accessories power supply
Z3	Photocell/optical edge TX power supply for functional test
Z4 - Z5	Lock 12V
Z5 - Z6	Low voltage light (12Vdc - 3W)

H1 - H2	Flashing light 230 / 120 Vac - 40W
H3	Motor M2 (OPENING)
H4	Motor M2 (COMMON)
H5	Motor M2 (CLOSING)
H6	Motor M1 (OPENING)
H7	Motor M1 (COMMON)
H8	Motor M1 (CLOSING)

L	Power phase 230V / 120V
N	Neutral 230V / 120V

RM	MR receiving modules
ADI	ADI interface
USB	USB connector
OVERLOAD	It shows that there is an overload on accessories power supply
MAINS	It shows that the control unit is power supplied
F1	5 A (230V versions) 8 A (120V versions)
J1 - J2 - J3	Connectors for the LOW ENERGY module



ATTENTION: jumpers J1 and J2 must be removed only to allow connection of the LOW ENERGY optional module. Insert the module only after having disconnected the power supply unit.

5.2 - MOTORS

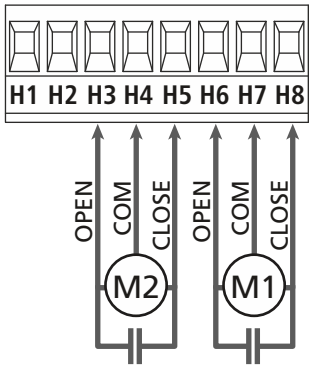
CX EVO1 control unit can control one or two alternate current asynchronous motors.

During the opening phase, motor M1 is started first, motor M2 starts after the time set for the parameter r.AP (opening delay).
During the closure phase, motor M2 is started first, motor M1 starts after the time set for the parameter r.Ch (closure delay).

The times set for the parameters r.AP and r.Ch are used to avoid the doors colliding. If necessary, change the default values by accessing the programming menu:

NOTE: If the control unit needs to control one motor only, the latter must be connected to terminals of motor M1.

1. Connect motor M1 cables as follows:
   - opening cable to terminal **H6**
   - closing cable to terminal **H8**
   - common return cable to terminal **H7**
2. Connect motor M2 (if any) cables as follows:
   - opening cable to terminal **H3**
   - closing cable to terminal **H5**
   - common return cable to terminal **H4**



WARNING:

- In case it has not yet fitted, a start capacitor for each motor is required; connect the start capacitor for motor M1 between terminals H6 and H8 and start capacitor for motor M2 (if any) between terminals H3 and H5.
- In case motor M2 is not connected, set menu t.AP2 to zero.

CONTROL OF THE CORRECT ORDER OF CLOSING LEAVES

If the control unit detects a wrong overlap order (leaf 1 gets to the closing position before leaf 2), the gate is opened a little again so that it can close correctly.
If the leaves do not overlap (e.g. in a double swing gate) set to zero the opening door delay parameter in order to disable the control of the right closing order.

HYDRAULIC MOTORS

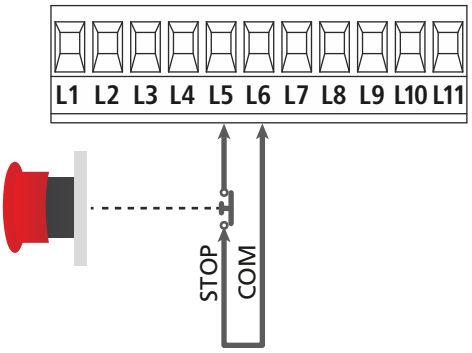
If hydraulic motors are used, it is necessary that some unit programming parameters are set out as follows:

- Motor power set at 100%
  PotI = 100
  Pot2 = 100
- Slowdowns are disabled (they are already disabled by default)
  rA.AP = no
  rA.Ch = no
- Obstacles sensor disabled
  SEnS = no

5.3 - STOP

For added safety, you can install a STOP switch that, when pressed, immediately stops the automation.
The switch must have a normally closed contact, which opens in case of activation.

- Connect the cables of the STOP switch between terminals **L5 (STOP)** and **L6 (COM)** of the unit.
  ☞ To activate the function, change the settings of parameter StoP



NOTE: in case the stop switch is operated while the gate is open, the automatic closing function will always be disabled. To close the gate again, you will need a start command (if the start function in pause is disabled, it will be temporarily enabled to allow the gate release).

The stop switch function can be activated by means of a remote control stored on channel 3 (see relevant instructions of MR receiver).

5.4 - ACTIVATION INPUTS

CX EVO1 is equipped with two activation inputs (START and START P.), whose operation depends on the programmed operation modes (see StrE parameter of programming menu)

Standard mode (DEFAULT)
START = START (it controls the total opening of the gate)
START P. = START PEDONALE (it controls the partial opening of the gate)

Open/Close command
START = APERTURA (it controls the opening of the gate)
START P. = CHIUSURA (it controls the closing of the gate)

Dead man operation
START = APERTURA (it controls the opening of the gate)
START P. = CHIUSURA (it controls the closing of the gate)

The gate is opened or closed until the contact of the START or START P. entrance remains closed; the gate stops immediately when the contact is opened.

Timer mode
This function allows programming the gate opening time during the day, by making use of an external timer.

START = START (it controls the total opening of the gate)
START P. = START PEDONALE (it controls the partial opening of the gate)

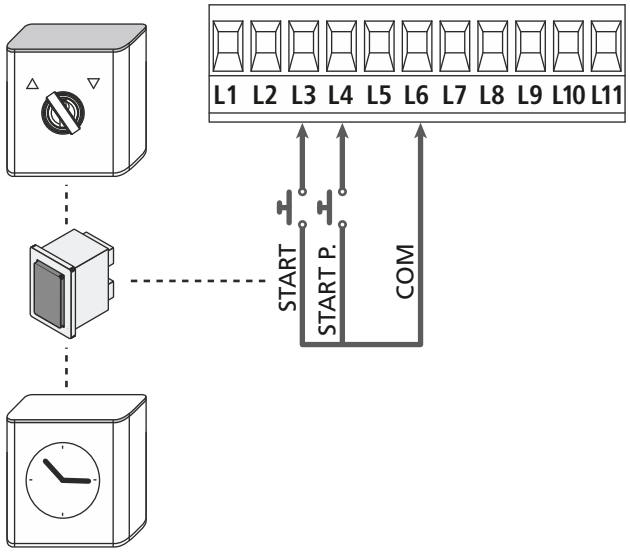
The gate remains open for the time in which the contact on the START or START P. entrance remains closed; as soon as the contact is open the pause time count down will start, after which the gate will be closed again.

ATTENTION: Automatic closing must be enabled (parameter Ch.AU).

NOTE: If the parameter t.APP = 0 the timer connected to START P. does not cause the opening, but can inhibit the automatic closing at preset times.

NOTE: in all modes, inputs must be connected to devices having normally open contacts.

Connect cables of device controlling the first input between terminals **L3 (START)** and **L6 (COM)** of the control unit.
Connect cables of device controlling the second input between terminals **L4 (START P.)** and **L6 (COM)** of the control unit.



The START function can also be activated by pressing UP key outside the programming menu or by means of a remote control stored on channel 1 (see relevant instructions of MR receiver).

The START P. function can also be activated by pressing DOWN key outside the programming menu or by means of a remote control stored on channel 2.

5.5 - PHOTOCELLS

The control unit considers two kinds of photocells, depending on the terminal to which they are connected:

Photocell 1
Photocells installed on the gate inner side, which are active both during the opening and the closing phase.
When photocells 1 operate, the control unit stops the gate; as soon as the photocell beam is free, the control unit will open the gate completely.

WARNING: Type 1 photocells must be installed so that they completely cover the opening area of the gate.

Photocell 2
Photocells installed on the external gate side and which are active during the closing phase only.
When photocells 2 operate, the control unit opens the gate immediately, without waiting for release.

The control unit supplies a 24Vac power supply to photocells and it can perform a photocell operation test before starting the gate opening phase.

NOTE: Photocell power terminals are protected by an electronic fuse that stops current in case of overload.

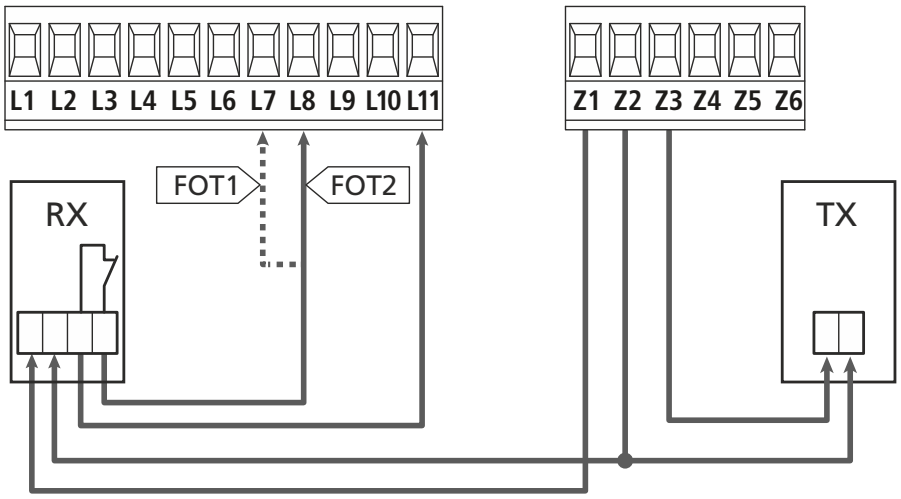
WARNING: the sensor cables must not be run in the same conduit as the motor cables.

- Connect power supply cables of photocells transmitter between terminals **Z3** and **Z2** of the control unit.
- Connect power supply cables of photocells receiver between terminals **Z1** and **Z2** of the control unit.
- Connect the N.C. exit of the photocell receivers of the 1 type between terminal boxes **L7** and **L11**

  ☞ To activate the functions, change the `Fot1` parameter settings
- Connect the N.C. exit of the photocell receivers of the 2 type between terminal boxes **L8** and **L11**

  ☞ Function is active in closing and with gate standing (closed). To change the operation, set parameter `Fot2` in the programming menu.

WARNING:
- if several couples of same kind photocells are mounted, their outputs must be connected in series.
- In case of reflection photocells, power supply must be connected to terminals **Z3** and **Z2** of the control unit to carry out the operation test.



5.6 - SAFETY EDGES

The control unit considers two kinds of safety edges, depending on the terminal to which they are connected:

Type 1 (fixed)
They are mounted on walls or on other fixed obstacles that are approached by the gate doors during the opening phase.
When type 1 safety edges operate during the gate opening phase, the control unit will close the doors for 3 seconds, then it stands still; when type 1 safety edges operate during the gate closing phase, the control unit will stand still immediately.
The direction of the gate at next command of START or PEDESTRIAN START depends upon the parameter STOP (it inverts or continues the motion).
If the input STOP is disabled, the command makes the motion continue in the same direction. If the STOP input is disabled, the control restarts motion in the same direction it was travelling prior to the intervention of the edge.

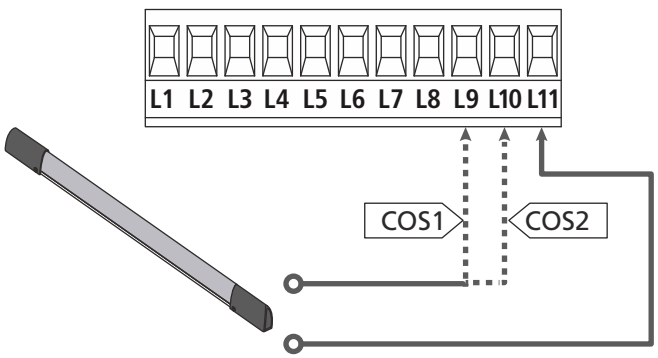
Type 2 (mobile)
They are mounted to the door ends.
When type 2 safety edges operate during the gate opening phase, the control unit will stand still immediately; when type 2 safety edges operate during the gate closing, the control unit will open the doors for 3 seconds, then it will stand still.
The direction of the gate at next command of START or PEDESTRIAN START depends upon the parameter STOP (it inverts or continues the motion). If the input STOP is disabled, the command makes the motion continue in the same direction.
If the STOP input is disabled, the control restarts motion in the same direction it was travelling prior to the intervention of the edge.

Both the input can manage the classic safety edge with N.C. contact and the conductive rubber safety edge with 8,2 kohm nominal resistance.

☞ Change the value of parameters CoS1 and CoS2 depending on the type of installed facet for cables.

WARNING: if the edges are resistive, it is mandatory to activate the safety edge test: set the parameter Co.tE = rES.

- Connect type 1 safety edges cables between terminals **L9** and **L11**
  ☞ To activate the function, change the settings of parameter CoS1
- Connect type 2 safety edges cables between terminals **L10** and **L11**
  ☞ To activate the function, change the settings of parameter CoS2



In order to meet the requirements of the EN12978 rules, it is necessary to install safety edges controlled by a control unit continuously checking the proper working. If using control units suited to the test by power outage, connect the power supply cables of the control unit between terminals Z3 and Z2 of the control unit.
Otherwise, connect them between terminals Z1 and Z2.

WARNING:

- Make use of safety edges having outputs with normally close contact.
- Outputs of same kind safety edges must be connected in series.

5.7 - LIMIT SWITCHES

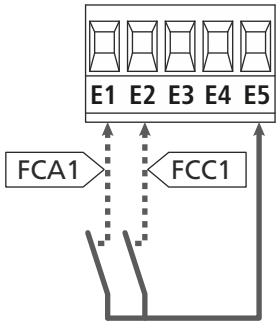
The CX EVO1 unit can control the gate run through a limit switches.

The limit swiches can be used for indicating the limits of the run or to indicate the start of the slowdown point.

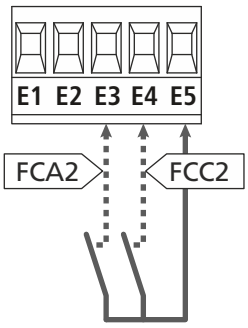
☞ To activate the function and select the type of operation (limits of run/start of slowdown) change the settings of the FC.En parameter.

Connect the limit switch to the unit terminal box as follows:

- opening limit switch in door 1 between terminal **E1** and **E5**
- closing limit switch in door 1 between terminal **E2** and **E5**



- opening limit switch in door 2 between terminal **E3** and **E5**
- closing limit switch in door 2 between terminal **E4** and **E5**



5.8 - ENCODER

With CX EVO1, you can use encoder-equipped motors to control the exact position of the gates. Furthermore, the encoders allow you to detect if the gate panels jam in an improper position due to obstacles.

For correct operation of the encoders, it is essential that both gate leaves rest against a mechanical stop when in the closed position.
Upon every switching on of the control unit, the first START control closes the gate to realign the encoders (if automatic closing is active this operation occurs automatically).

ATTENTION: Limit switches entry terminals are used to connect the encoders. Therefore, it is not possible to connect simultaneously 2 motors with limit switches and encoder.

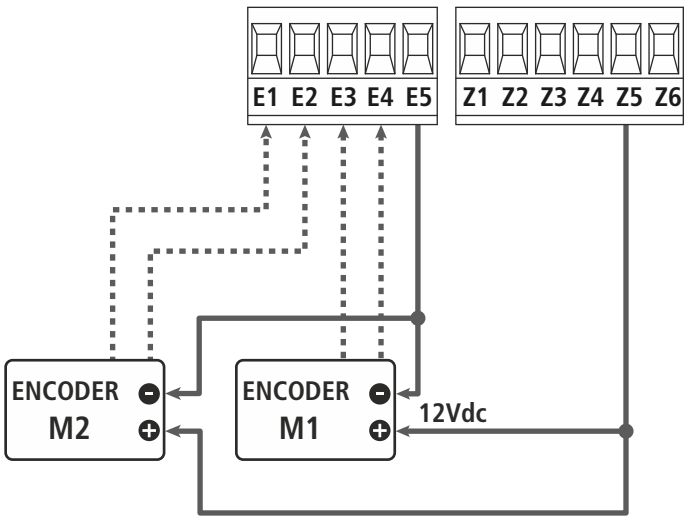
WARNING: the sensor cables must not be run in the same conduit as the motor cables.

WARNING: the encoders must be connected as indicated below. Improper connection of the black cable may damage the device.

CONNECTION OF TWO MOTORS WITH ENCODERS

- Connect the negative feeds (BLACK cable) for both encoders to terminal **E5**
- Connect the positive feeds (RED cable) for both encoders to terminal **Z5**
- Connect the motor 1 encoder signal cables (BLUE / WHITE) to terminals **E3** and **E4**
- Connect the motor 2 encoder signal cables (BLUE / WHITE) to terminals **E1** and **E2**

☞ To activate the function, change the settings of parameter EnCo



CONNECTION OF ONE MOTOR WITH ENCODER AND LIMIT SWITHCES

Installation of encoder

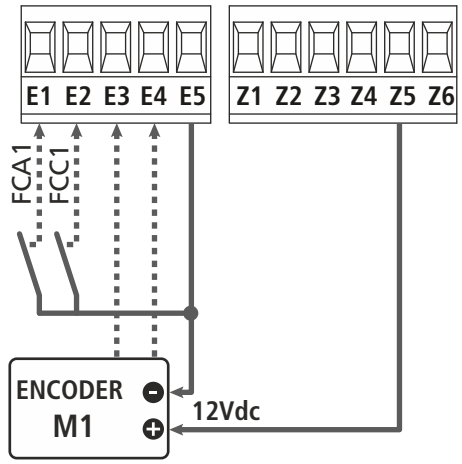
- Connect the negative feeds (BLACK cable) to terminal **E5**
- Connect the positive feeds (RED cable) to terminal **Z5**
- Connect the encoder output (BLUE / WHITE) to terminals **E3** and **E4**

☞ To activate the function, change the settings of parameter EnCo

Installation of limit switch

- Connect the open limit switch to terminals **E1** and **E5**
- Connect the close limit switch to terminals **E2** and **E5**

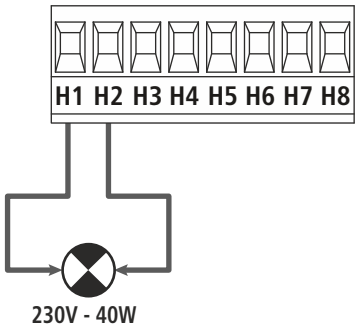
☞ To activate the function, change the settings of parameter FC.En



5.9 - FLASHING LIGHT

CX EVO1 provides for a 230V - 40W (120V – 40W for 120V model) flashing light equipped with intermittence inside.

Connect flashing light cables to terminals **H1** and **H2** of the control unit.

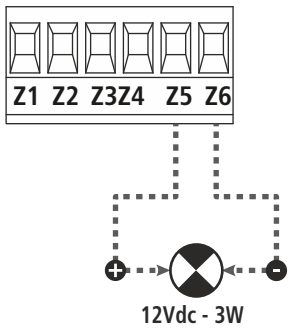


5.10 - LOW VOLTAGE LIGHT

The control unit has a 12Vdc output that allows connections to a load up to 3W.
This output can be used to connect a signal light that indicates that status of the gate, or for a low voltage flashing light.

Connect the low voltage signal light or flashing light wires to terminals **Z5 (+)** and **Z6 (-)**.

☞ To activate the function, change the settings of parameter SPiA



CAUTION: Pay attention to the polarity of the connected device if necessary

5.11 - LOCK

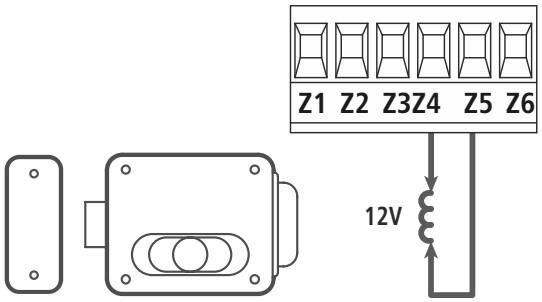
An electric lock can be assembled on the gate, to ensure a good
closing of doors. Make use of a 12V lock.

Connect lock cables to terminals **Z4** and **Z5** of the control unit.

☞ To modify the times of action of the lock, check the settings of the following parameters:
- t.SEr lock time
- t.ASE advanced lock time

If the electric lock has di culties in the early stages of release or engagement, there are functions to facilitate these operations:

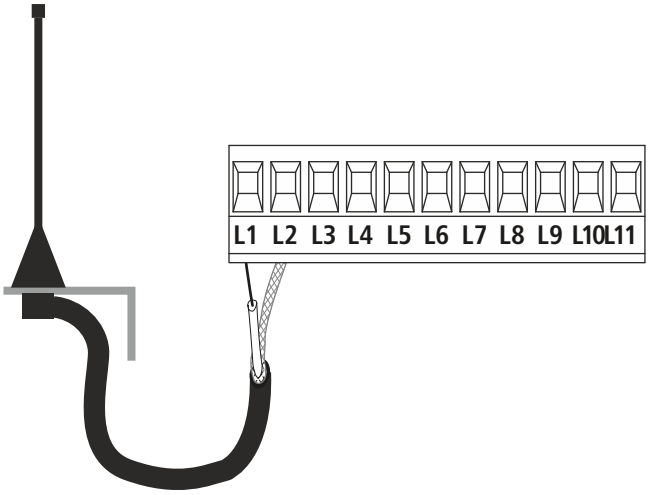
1. **Backlash time**: before starting an opening the motors are driven into closing to facilitate the release of the lock.
   ☞ To activate this function set the ram hammering time through the t.inu parameter
2. **Fast closing time after slowdown:** once completed the slowdown stage, the unit orders closing at normal speed (without slowdown) to facilitate engagement of the lock.
   ☞ To activate this function, set the fast closing time through
   the t.CuE parameter



5.12 - EXTERNAL AERIAL

We suggest to use the external aerial (model: ANS433) in order to guarantee the maximal range.

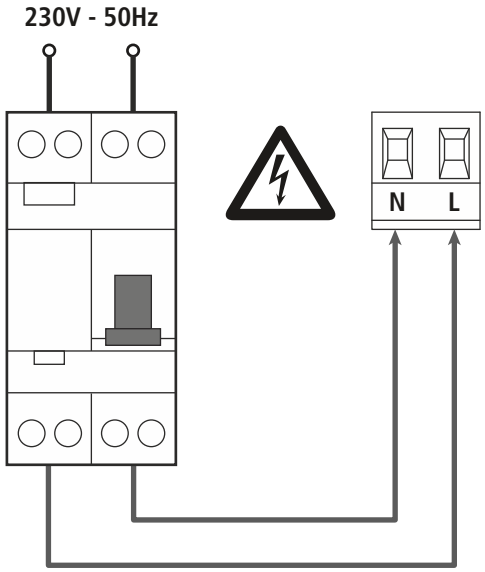
Connect the antenna hot pole to terminal **L1** of the control unit and the braiding to terminal **L2**.



5.13 - POWER SUPPLY

The control unit must be fed by a 230V - 50Hz (120V - 50/60Hz for 120V model) electric line, protected by a differential magnetothermal switch complying with the law provisions in force.

Connect power supply cables to terminals **L** and **N**.



6 - PLUG IN RECEIVER

CX EVO1 is suitable for plugging in a Personal Pass MR receiver.

WARNING: Pay attention to the way you connect the removable modules.

MR1 module receiver is provided with 4 channels and each of them is suitable for a command of CX EVO1 control unit::

- CHANNEL 1 → START
- CHANNEL 2 → PEDESTRIAN START
- CHANNEL 3 → STOP
- CHANNEL 4 → COURTESY LIGHT

The transmitter codes can be stored in two ways:

1. By pressing the P1 button on the MR receiver (read the instructions supplied with the receiver)
2. Using WINPPCL software: to run the program you need to connect a PC to the control unit. The connection can be made via USB using a standard USB cable.

7 - USB CONNECTOR

The CX EVO1 unit is equipped with an USB connector for connection with a PC.
By using software V2+ (version 2.0 or higher), it is possible to carry out the following operations:

1. Firmware update of the unit.
2. Change of programming parameters.
3. Reading information of diagnostics.

If the unit is not fed, by connecting the USB cable to the unit and the PC, the display switches on and caption -USb is displayed: in this stage only the programming operations through the PC can be carried out.

If the unit is fed, by connecting the USB cable to the unit and the PC, the display continues to display the control panel: in this stage the programming operations through the PC, can be carried out, or control the gate.

NOTE: to carry out the firmware updating, it is necessary to disconnect the unit network power supply (during updating the display is switched off).
All other operations can be carried out while the unit is power supplied.

8 - ADI INTERFACE

The CX EVO1 unit is equipped of ADI advanced interface, which allows connection with a series of optional modules.

Refer to catalogue V2 to see which optional modules are available for this unit.

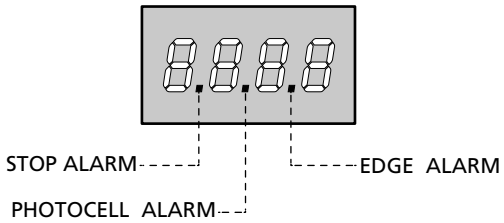
WARNING: Please read the instructions of each single module to install the optional modules.

For some devices, it is possible to configure the mode for interfacing with the control unit; in addition, it is necessary to enable the interface so that the control unit can process the signals arriving from the ADI device.

Please refer to the i.Adi programming menu to enable the ADI interface and access the device configuration menu.

The device connected to the Adi interface is able to signal to the control unit three alarm signals, which are displayed on the control unit display as follows:

- **Photocell alarms** - the "point" indicated in the Figure flashes: the gate stops moving, when the alarm stops opening restarts.
- **Edge alarm** - the "point" indicated in the Figure flashes: inverts motion of the gate for 3 seconds.
- **Stop alarm** - the "point" indicated in the Figure flashes: the gate stops and cannot restart until the alarm stops.



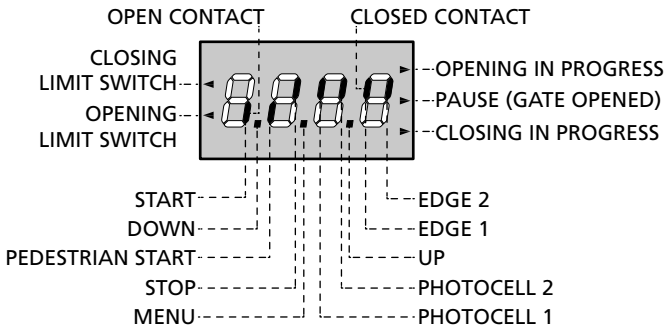
The ADI interface allows operation in advanced mode, which is activated automatically if an ADI device is connected on the dedicated connector.
Up to 8 devices can be connected simultaneously in this mode, which must be recognised by the unit through the SCAn procedure of learning, available in the i.Adi menu.

NOTE: Every time that an ADI device is added or removed, it is necessary to repeat the scanning procedure in order to update the unit.

9 - CONTROL PANEL

When power is on, the control unit checks that display correctly operates by switching on all segments for 1.5 sec. 8.8.8.8.
Then you can see the ID of the control unit (Euol) and the version of the firmware (Pr 1.0).

Panel will be viewed upon completion of this test.



The control panel represents the physical status of the terminal board contacts and of the program mode keys: if the upper vertical segment is on, the contact is closed; if the lower vertical segment is on, the contact is open (the above picture shows an instance where the inputs START, START P, FOTO 1, FOTO 2, COSTA 1, COSTA 2 and STOP have all been correctly connected).

Points being among display digits show the status of programming push-buttons: as soon as a push-button is pressed, its relevant point turns on.
NOTE: the "points" among the numbers, are used also to signal the state of the remote safety devices controlled through the ADI module.

The arrows on the display left side show the status of the ends of stroke. As for a one door-gate, arrows turn on when its end of stroke shows that the gate is completely closed or completely open.

As for a two-door gate, arrows turn on when both the ends of stroke show that both the doors are completely closed or completely open; the arrow will blink in case only one door reaches its end of stroke.

WARNING: these functions have not been activated in case of ends of stroke being connected in series to the motor.

The arrows on the display right side show the gate status:

- The highest arrow turns on when the gate is into its opening phase. If it blinks, it means that the opening has been caused by a safety device (border or obstacle detector).
- The central arrow shows that the gate is on pause. If it blinks, it means that the time countdown for the automatic closing has been activated.
- The lowest arrow blinks when the gate is into its closing phase. If it blinks, it means that the closing has been caused by a safety device (border or obstacle detector).

9.1 - USE OF DOWN MENU AND UP KEYS FOR PROGRAMMING

Control unit time and function programming is made within a special configuration menu, to which you can access and where you can shift through DOWN, MENU and UP keys placed under the display.

CAUTION: Except in the configuration menu, pressing the UP key activates a START command and pressing the DOWN key activates a START PEDESTRIAN command.

Hold down the MENU key to scroll through the 5 main menus:

-Pr.S BASE PROGRAMMING (SHORT MENU): only the useful parameters for a base programming are displayed.

-Pr.F ADVANCED PROGRAMMING (FULL MENU): all parameters of the programming menu are displayed.

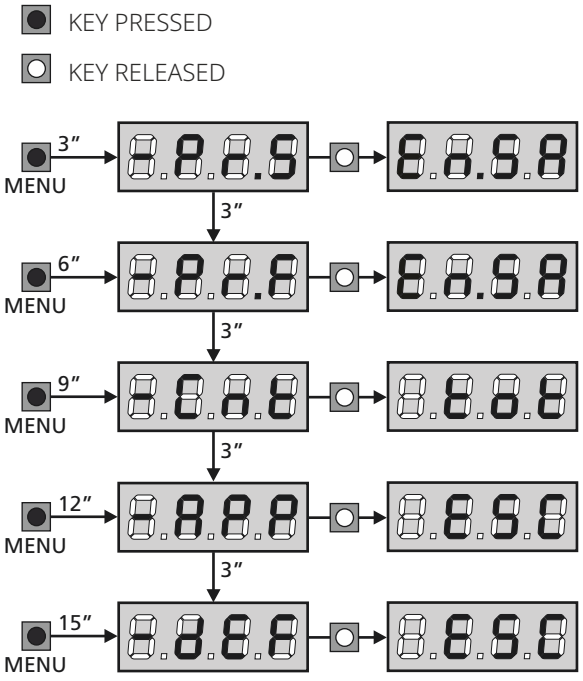
-Cnt COUNTERS

-APP SELF-LEARNING OF WORKING TIMES

-dEF LOAD DEFAULT PARAMETERS

To enter one of the 5 main menus, just release the MENU key when the menu you want appears on the display.

To move through the 5 main menus, press the UP and DOWN keys to scroll through the various items. Press the MENU key to display the current value of the selected item and change it if needed.



10 - QUICK CONFIGURATION

This paragraph concerns a quick procedure to set the control unit and set it at work immediately.
We recommend following these instructions, in order to check quickly the correct operation of control unit, motor and accessories, and then changing the configuration in case of any non-satisfactory parameter.

1. Call up the default configuration (chapter 11).
   NOTE: The DEFAULT configuration includes a photocell connected to the FOT2 input.

WARNING: If you load the AntE DEFAULT and the installation only requires one door, set the opening time t.AP2 to zero.

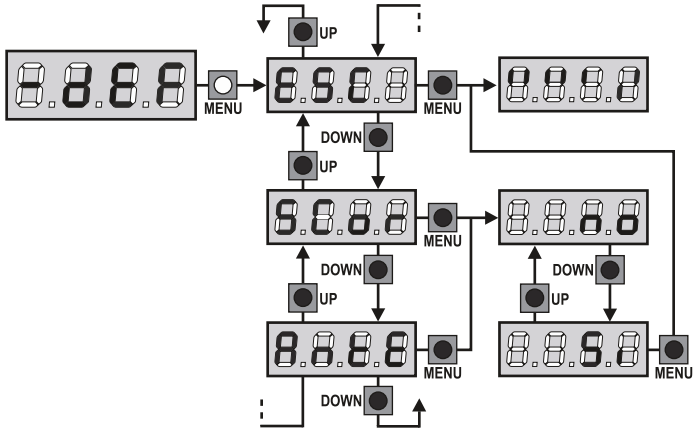
2. Set parameters StoP, Fot1, Fot2, CoS1, CoS2 according to the safety devices installed on the gate
3. Check that the connection of the motors is correct:
   a. Feed the unit and activate the automation with a START order: the motors must move in opening in the correct order
   b. If the direction of the movement is wrong, invert the opening/closing motor cables that move in reverse
   c. If the opening order of the doors is not correct, invert the connections of the two motors
4. Start the self-learning cycle (chapter 12)
5. Check that the automation work properly and if necessary modify the configuration of the desired parameters

11 - LOADING OF DEFAULT PARAMETERS

If necessary, it is possible to restore all the parameters to their standard or default value (see table at the end)

WARNING: This procedure causes the loss of all the customized parameters.

1. Press and hold down the MENU key until the -dEF appears on the display
2. Release the MENU key: the display will show ESC (press the MENU key only if you want to leave this menu)
3. - If the unit controls a door, press the UP key: the display shows AntE
   - If the unit controls another type of automation press the DOWN key: the display shows SCor
4. Press the MENU key: no will appear on the display.
5. Press the DOWN key: Si will appear on the display.
6. Press the MENU key: All of the parameters are returned to their default values (chapter 16) and the display shows the control panel



12 - SELF-LEARNING OF WORKING TIMES

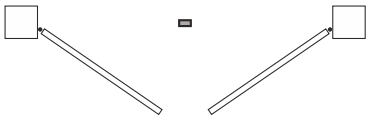
This menu allows the automatic learning of the times necessary to open and close the gate. The encoder positions are also saved, if enabled.

ATTENTION: before starting the procedure, it is necessary to check the following points:

- Limit switches and encoder: these devices, if installed, must be enabled through the special menu (FC.En , Enco).
- ADI Interface disabled (DEFAULT): the ADI interface must be disabled through the i.Adi menu.
- STANDARD (DEFAULT) operation mode: the Strt parameter must be set on StAn

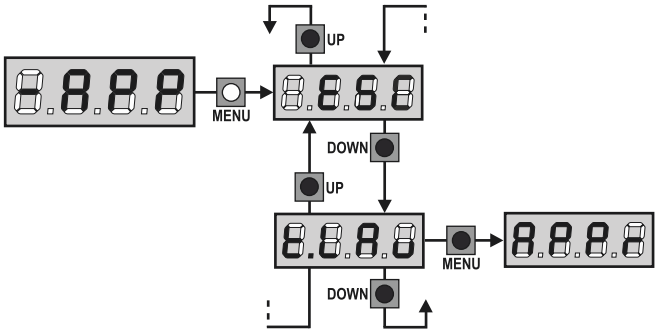
WARNING: **if the function PHOTOCELL SHADOW ZONE is active, the intervention of the photocell during the self-learning does not open the gate; the control unit automatically sets the parametersof the shadow zone in order to disable the photocell when the gate passes in the position of its intervention.**

Place the doors, or door, at half run and proceed with the following points:

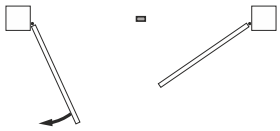
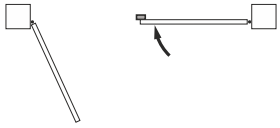
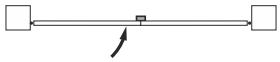
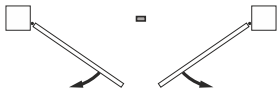
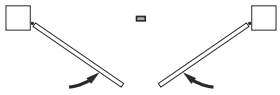


NOTE: if the gate has only one door, the opening time of motor 2 must be set at 0 (t.AP2 = 0)

1. Press and hold down the MENU key until the -APP appears on the display
2. Release the MENU key: the display will show ESC (press the MENU key only if you want to leave this menu)
3. Press the DOWN key: t.LAu will appear on the display
4. Press the MENU key to start the self-learning cycle for the work cycle times.
   CAUTION: This procedure varies based on the number of gate panels and travel control devices installed (refer to the tables outlined on the following pages).

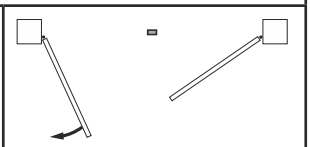
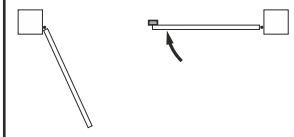
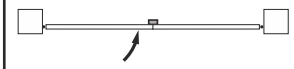
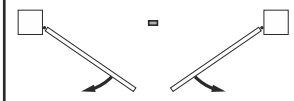
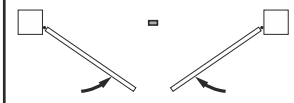


2 MOTORS
(LIMIT SWITCHES OR SENSOR OF OBSTACLES IS ENABLED)

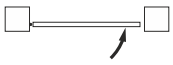
1. Door 1 is opened for a few seconds	
2. Door 2 is closed until the limit switches comes into action, or the sensor of obstacles detects that the door is locked	
3. Door 1 is closed until the limit switches comes into action, or the sensor of obstacles detects that the door is locked	
4. An opening manoeuvre for each door is carried out, the operation ends when the limit switches comes into action, or the sensor of obstacles detects that the door is locked	
5. A closing manoeuvre for each door is carried out, the operation ends when the limit switches comes into action, or the sensor of obstacles detects that the door is locked	
6. The detected parameters are stored and the unit is ready for use	

2 MOTORS
(NO LIMIT SWITCHES AND SENSOR OF OBSTACLES IS DISABLED)

ATTENTION: in this case the limits of the run must be signalled with a START order

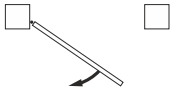
1. Door 1 is opened for a few seconds	
2. Door 2 is closed until the unit receives a START order	
3. Door 1 is closed until the unit receives a START order	
4. An opening manoeuvre is carried out for each door, the operation ends when the unit receives a START order (the first START stops door 1, the second START stops door 2)	
5. A closing manoeuvre is carried out for each door, the operation ends when the unit receives a START order (the first START stops door 2, the second START stops door 1)	
6. The detected parameters are stored and the unit is ready for use	

1 MOTOR
(LIMIT SWITCHES OR SENSOR OF OBSTACLES IS ENABLED)

1. The door is closed until the limit switches comes into action, or the sensor of obstacles detects that the door is locked	
2. An opening manoeuvre is carried out, the operation ends when the limit switches comes into action, or the sensor of obstacles detects that the door is locked	
3. A closing manoeuvre is carried out, the operation ends when the limit switches comes into action, or the sensor of obstacles detects that the door is locked	
4. The detected parameters are stored and the unit is ready for use	

1 MOTOR
(NO LIMIT SWITCHES AND SENSOR OF OBSTACLES IS DISABLED)

ATTENTION: in this case the limits of the run must be signalled with a START order

1. The door is closed until the unit receives a START order	
2. An opening manoeuvre is carried out, the operation ends when the unit receives a START order	
3. A closing manoeuvre is carried out, the operation ends when the unit receives a START order	
4. The detected parameters are stored and the unit is ready for use	

13 - READING OF CYCLE COUNTER

CX EVO1 control unit counts the completed opening cycles of the gate and, if requested, it shows that service is required after a fixed number of cycles.

There are 3 counters available:

- A totalizing counter for completed opening cycles that cannot be zeroed (option tot of item -Cnt)
- A downward counter for the number of cycles before the next request for service (option SEru of item -Cnt). This counter can be programmed according to the desired value.
- Event counter (EuEn option, see chapter 14)

To access the menu follow these instructions:

1. Press and hold down the MENU key until the -Cnt appears on the display
2. Release the MENU key: the display will show tot

The scheme hereafter shows how to read the totalizing counter, how to read the number of cycles before the next service is required as well as how to program the number of cycles before the next request for service (as for the example shown, the control unit completed no. 12451 cycles and there are no. 1300 cycles before the next service request.

Area 1 is the reading of the total number of completed cycles; through Up and Down keys, you can alternate the display of thousands or units.

Area 2 is the reading of the number of cycles before the next request for service: its value is rounded down to the hundreds.

Area 3 is the setup of this latter counter; on first pressing the Up or Down key the current value of the counter is rounded to the thousand, each press after this increases the setting by 1000 units or decreases by 100.
The previous displayed count will get lost.

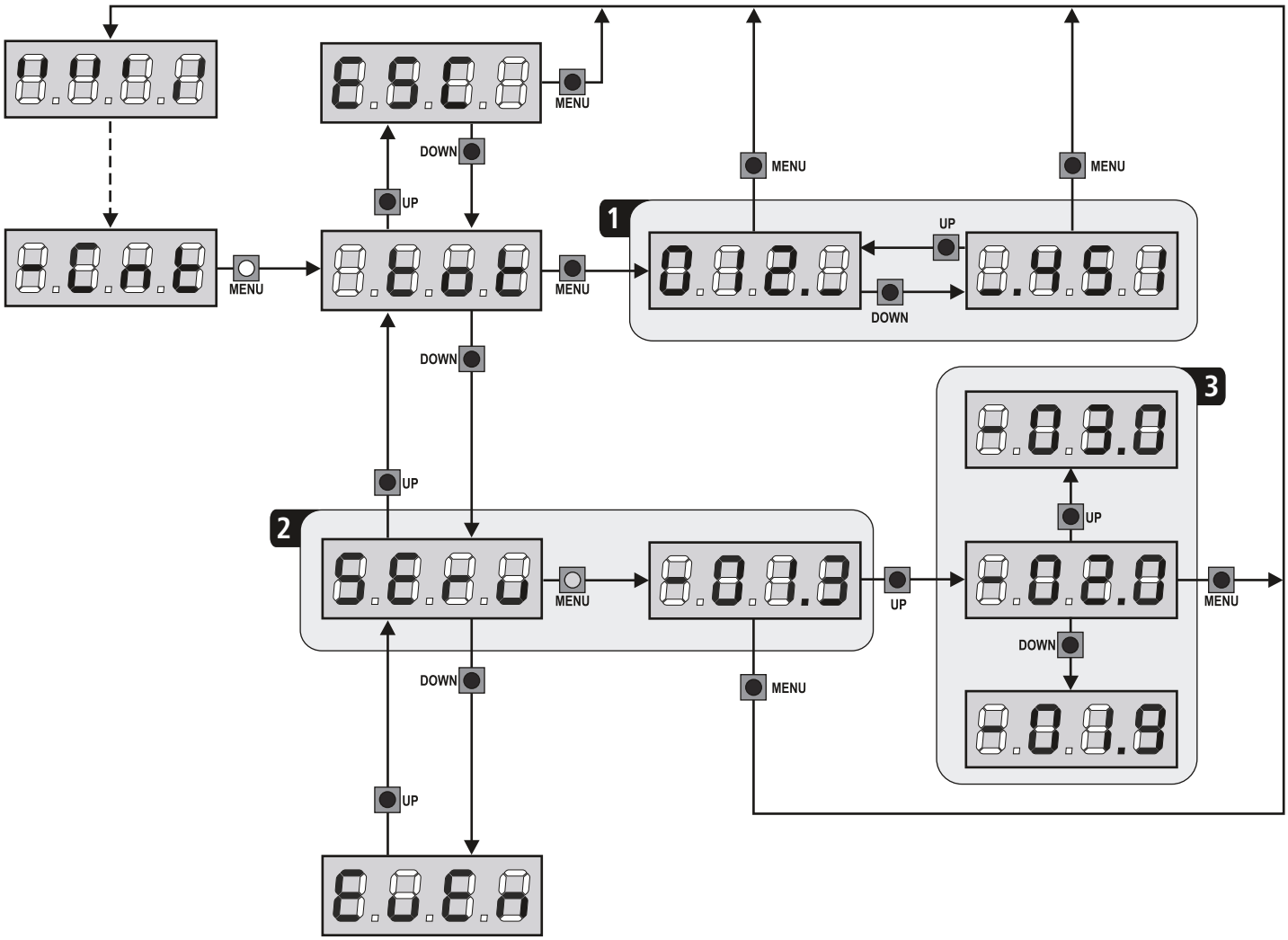
13.1 - SIGNAL OF SERVICE REQUIRED

As soon as the counter of cycles before the next request for service is zero, the control unit shows the request for service through an additional 5-second pre-blinking.

This signal will be repeated at each opening cycle, until the installer enters into the counter reading and setup menu, and possibly programs the number of cycles after which the next service will be requested.

In case no new value is setup (that is to say that the counter value is left at zero), the signalling function for the service request will be disabled and no signal will be repeated anymore.

WARNING: service operations shall be carried out by qualified staff only.



14 - DIAGNOSTICS (READING OF EVENT)

To perform a diagnostic on the operation of the installation, the CX EVO1 control unit stores events that interfere with the normal operation of the automation.

The events are stored according to the level of importance that is set for the Eu.M parameter.

Using the V2+ software (connection via USB), it is possible to display the last 127 events.

Using the display of the control unit, it is possible to display the last 32 events.

To access the menu follow these instructions:

1. Press and hold down the MENU key until the -Cnt appears on the display
2. Release the MENU key: the display will show tot
3. Press the DOWN key twice: the display will show EuEn
4. Press the MENU key to display the list of events

The events are numbered in ascending order from n-01 to n-32 (n-01 is the most recent, n-32 the oldest); select the event and press the MENU key to display the following information:

A - EVENT CODE
The code displayed is used to define the type of event that has occurred (see the dedicated table on the next page)

B - STATE OF AUTOMATION
- S=FE gate stopped
- S=AP gate opening
- S=PA gate paused
- S=Ch gate closing
- S=in control unit initializing
- S=M control unit in programming phase
- S=Sb control unit on stand-by

C - CYCLES AFTER THE EVENT
This counter displays how many cycles have been completed after the event has occurred. C-00 means that the event has occurred in the current cycle which has been stopped
C-99 means 99 or more cycles were completed after the event

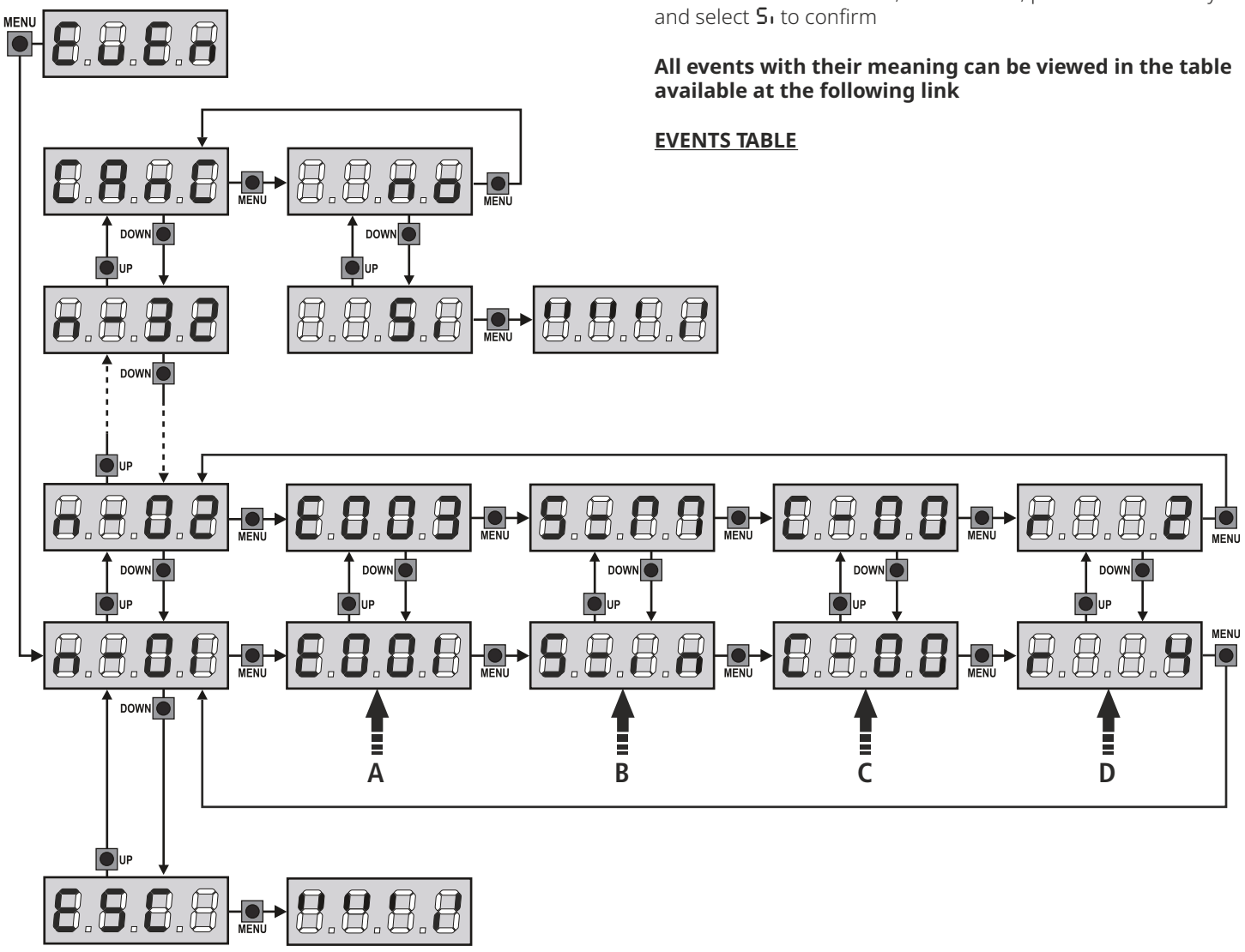
D - REPETITIONS
This counter shows how many times the event has repeated in the same cycle (r 0 means that the event occurred only once)

To exit the menu, select ESC and press the MENU key to confirm

To delete all stored events, select CAnC, press the MENU key and select S1 to confirm

All events with their meaning can be viewed in the table available at the following link

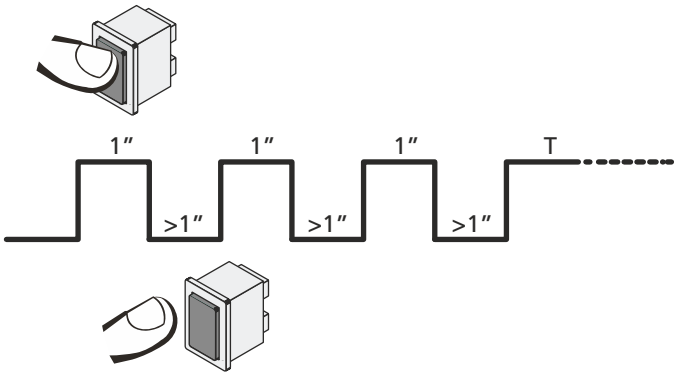
EVENTS TABLE



15 - EMERGENCY DEAD MAN OPERATION

This operational mode can be used to move the gate in DEAD MAN mode in particular cases, such as installation/ maintenance or in the case of malfunctioning of photocell, edge, limit switches or encoder.

To activate the function the START command must be pressed 3 times (presses must last at least 1 second; the pause between commands must last at least 1 second).



The fourth START command activates the gate in MAN PRESENT mode. To move the gate keep the START command pressed for the duration of the operation (time T).
The function will automatically turn off after 10 seconds of inactivity of the gate.

NOTE: if the Strt parameter is set as StAn, the Start command (from the terminal block or remote control) moves the gate in the open and closed directions alternatively (unlike the normal DEAD MAN mode).

16 - CONTROL UNIT CONFIGURATION

Control unit time and function programming is made within a special configuration menu, to which you can access and where you can shift through DOWN, MENU and UP keys placed under the display.

The configuration menu consists in a list of configurable items; the display shows the selected item.

- By pressing DOWN, you will pass to the next item
- By pressing UP, you will return to the previous item
- By pressing MENU, you can view the current value of selected item and possibly change it.

Based on the requirements of the installation, it is possible to activate the SHORT or FULL programming menu.
The SHORT menu consists only of parameters useful for a programming base, while the FULL menu consists of all the parameters of the programming menu (the parameters present only in the FULL menu are shown in the table).

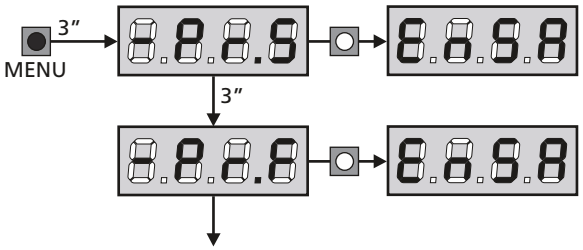
To activate the SHORT programming menu hold the MENU key until the display shows -Pr.S; by releasing the key, the unit displays the first parameter of the En.SA menu.

To activate the FULL programming menu hold the MENU key until the display shows -Pr.F; by releasing the key, the unit displays the first parameter of the En.SA menu.

The last menu item (FinE) allows storing the carried out changes and going back to the control unit normal operation. You must exit from programming mode through this menu item if you do not want to lose your configuration.

WARNING: in case no operation is carried out for more than one minute, the control unit exits from the programming mode without saving any of your setups and changes, which will get lost.

NOTE: By holding pressed the UP key the programming menu parameters scroll fast backwards until item En.SA is displayed.
By pressing key DOWN the programming menu parameters scroll fast forward until item FinE is displayed.



PARAMETER	VALUE	DESCRIPTION	AntE	SCor
En.SA		**ENERGY SAVING function** When the function is active and the LOW ENERGY module is installed, the control unit deactivates the display, the photocells, and all the devices powered by a terminal box under determined conditions. **NOTE**: If the LOW ENERGY module is not installed, the control unit deactivates only the display. The control unit activates the ENERGY SAVING mode under the following conditions: • 30 seconds after completion of an operational cycle • 30 seconds after an opening (if automatic closure is not enabled) • 30 seconds after exiting the programming menu The control unit exits from the ENERGY SAVING mode in these cases: • If an operational cycle is activated • If one of the keys on the control unit are pressed	no	no
	no	Function deactivated		
	Si	Function activated		
t.AP1		**Leaf 1 opening time**	20.0"	22.5"
	0.0"-5'00	Adjustable time from 0 seconds to 5 minutes		
t.AP2		**Leaf 2 opening time**	20.0"	0.0"
	0.0"-5'00	Adjustable time from 0 seconds to 5 minutes. **WARNING**: if motor M2 is not connected, this time must be set to zero		
t.Ch1		**Leaf 1 closing time**	21.0"	23.5"
	0.0"-5'00	Adjustable time from 0 seconds to 5 minutes. **NOTE**: To avoid that the door does not close completely, we recommend to setup a longer time than t.AP1 opening time.		
t.Ch2		**Leaf 2 closing time**	21.0"	0.0"
	0.0"-5'00	Adjustable time from 0 seconds to 2 minutes **NOTE:** To avoid that the door does not close completely, we recommend to setup a longer time than t.AP2 opening time		
t.APP		**Partial opening time (pedestrian access)**	6.0"	6.0"
	0.0" - 2'00	When the control unit receives a Start Pedestrian command, it will open leaf 1 only, for a shorter time. Max allowed time to be setup is t.AP1		
t.ChP		**Partial closing time (pedestrian access)**	7.0"	7.0"
	0.0" - 2'00	When the control unit receives a Start Pedestrian command, it will use this time to close the gate. Max allowed time to be setup is t.Ch1. **NOTE:** To avoid that the door does not close completely, we recommend to setup a longer time than t.APP opening time		
t.C2P		**Leaf 2 closing time during pedestrian cycle**	2.0"	no
	0.5" - 1'00	During a partial opening cycle (pedestrian access) leaf 2 may move slightly because of the wind or its own weight; in this case at closing time leaf 1 could hit leaf 2 and the gate would remain not perfectly closed. To avoid this, in the last seconds of the cycle a light closing force is applied to leaf 2 too.		
	no	Function deactivated		
r.AP		**Opening door delay**	1.0"	0.0"
	0.0" - 1'00	During the opening phase, leaf 1 must start moving before leaf 2, to avoid that both doors may collide. Leaf 2 opening will be delayed for the setup time. **NOTE**: If you set the opening door delay to zero, the control board does not execute the control of the correct leaves closing order		

PARAMETER	VALUE	DESCRIPTION	AntE	SCor
r.Ch		**Closing door delay**	3.0"	0.0"
	0.0" - 1'00	During the closing phase, leaf 1 must start moving after leaf 2, to avoid that both doors may collide. Leaf 1 closing will be delayed for the setup time		
C2rA		**Closing leaf 2 during delayed opening** With some gates, the second leaf is held closed by a pole, which might become blocked if the leaf is left free while leaf 1 only is opened. This parameter makes it possible to exercise slight closing pressure on leaf 2 during delayed opening, so that the pole remains free.	no	no
	no	Function deactivated		
	Si	Function activated		
t.SEr		**Lock time**	2.0"	no
	0.5"- 1'00	Before the opening phase begins, the control unit will energize the electric lock in order to release it and enable the gate motion. t.SEr time will fix the energizing time. **WARNING: in case the gate has no electric lock, set the value** no		
	no	Function deactivated		
SEr.S		**Silent Locking Mode**	Si	Si
	Si	Function activated (140 Hz)		
	no	Function deactivated (50 Hz)		
t.ASE		**Lock advance time**	1.0"	0.0"
	0.0"- 1'00	While the electric lock is energized, the gate will stay standstill for t.ASE time, to make its release easier. In case t.ASE is lower than t.SEr, the lock energizing will go on while the doors will start moving. **WARNING:** in case the gate has no electric lock, set the value 0.0"		
t.inv		**Backlash time**	no	no
	no	Function deactivated		
	0.5" - 1'00	To facilitate uncoupling of the electrical lock, it may be useful to control the motors before starting opening for a short time. The control unit controls the motors in reduced power in closing direction for the setup time		
t.PrE		**Pre-blinking time**	1.0"	1.0"
	0.5" - 1'00	Before any gate movement, blinker will be activated for t.PrE time, to warn about the incoming motion		
	no	Function deactivated		
t.PCh		**Different closing pre-flashing time**	no	no
	no	The closing pre-flashing time corresponds to t.PrE		
	0.5" - 1'00	If this parameter has a value assigned to it, the control unit will activate pre-flashing prior to closure for the length of time set in this menu		

PARAMETER	VALUE	DESCRIPTION	AntE	SCor
Pot1		**Motor M1 power**	60	60
	30 - 100	The displayed value is the percentage of max. motor power. **WARNING:** In case an hydraulic motor is used, set value 100		
Pot2		**Motor M2 power**	60	60
	30 - 100	The displayed value is the percentage of max. motor power. **WARNING:** In case an hydraulic motor is used, set value 100		
SPUn		**Start off** When the gate is standstill and it begins moving, the initial inertia must be faced, therefore, if your gate is quite heavy, its doors could not move. In case the SPUn (pickup) function is activated, for the first 2 seconds of motion of each door, the control unit will ignore both Pot1 and Pot2 values and it will give motors the maximum power command in order to overcome the gate inertia.	Si	Si
	Si	Function activated		
	no	Function deactivated		
rAM		**Starting ramp**	4	4
	0 - 6	In order not to stress too much the motor, when the motion starts the power is gradually increased, until reached the set value or 100% if the take-off is enabled. Higher is the set value, longer the length of time of the ramp, that is the time necessary to reach the value of nominal power.		
rA.AP		**Slow down in opening**	25	15
	no	Function deactivated		
	1 - 50	This menu allows regulating the percentage of the ride/drive that is carried out at reduced speed during the last opening stretch		
rA.Ch		**Slow down in closing**	25	15
	no	Function deactivated		
	1 - 50	This menu allows regulating the percentage of the ride/drive that is carried out at reduced speed during the last closing stretch		
t.CuE		**Fast closing time after slowing down**	0.0"	0.0"
	0.0" - 5.0"	If a slowing time other than 0 is set up, it could be likely that the gate speed is not enough for the lock to fasten during the closing phase. In case this function is enabled, once the slowing down phase is finished, the control unit will give a normal speed command (that is to say, with no slowing down) for the set up time, and then it will open the gate for a second fraction, to avoid leaving the motor under stress. **PLEASE NOTE:** Set to 0 if the gate is not fitted with electro-locks or if slowing is disabled.		
tE.M		**Enabling the test motor** The unit performs an operation test on the motor before starting the automation. **ATTENTION:** disable this function only if it is necessary to perform emergency manoeuvres.	Si	Si
	Si	Function activated		
	no	Function deactivated		

PARAMETER	VALUE	DESCRIPTION	AntE	SCor
St.AP		**Start command during the opening phase** This menu allows fixing the control unit conduct in case it receives a Start command during the opening phase	PAUS	PAUS
	PAUS	The gate stops and goes to pause		
	Ch.U	The gate immediately starts closing		
	no	The gate go on with the opening phase (command is ignored)		
St.Ch		**Start command during the closing phase** This menu allows fixing the control unit conduct in case it receives a Start command during the closing phase	StoP	StoP
	StoP	The gate stops and its cycle is considered as finished		
	APEr	The gate opens again		
St.PA		**Start command during the pause** This menu allows fixing the control unit conduct in case it receives a Start command when the gate is open during its pause phase	Ch.U	Ch.U
	Ch.U	The gate starts closing		
	no	Command is ignored		
	PAUS	The pause time is reset (Ch.AU)		
SPAP		**Pedestrian Start during the partial opening phase** This menu allows fixing the control unit conduct in case it receives a Pedestrian Start command during the partial opening phase. **WARNING**: a Start command in any phase of partial opening will cause the total opening; the Start Pedestrian command is always ignored during a total opening.	PAUS	PAUS
	PAUS	The gate stops and goes to pause		
	Ch.U	The gate immediately starts closing		
	no	The gate goes on with the opening phase (command is ignored)		
Ch.AU		**Automatic closing**	no	no
	no	Function deactivated		
	0.5" - 20.0'	The gate closes after the setup time		
Ch.tr		**Closing after transit** This function allows having a fast closing as soon as transit through the gate is completed, therefore, a time shorter than Ch.AU is generally used	no	no
	no	Function deactivated. The gate closes after the time set for the function Ch.AU		
	0.5" - 20.0'	The gate closes after the setup time		
PA.tr		**Pause after transit** In order to let the gate open for the shortest possible time, it is possible to stop the gate once the passage before the photocells is detected. If the automatic working is enabled, the time of the pause is Ch.tr.	no	no
	no	Function deactivated		
	Si	Function activated		

PARAMETER	VALUE	DESCRIPTION	AntE	SCor
SP.A		**Low voltage lights** This menu allows setting the operation of the low voltage lights output	no	no
	no	Function deactivated		
	W.L.	Indicator light operation: Indicates the status of the gate in real-time. The type of blinking indicates the four possible conditions: - GATE STOPPED: Light off - GATE IN PAUSE: the light is on, fixed - GATE OPENING: the light blinks slowly (2 Hz) - GATE CLOSING: the light blinks quickly (4 Hz)		
	FLSh	Flashing light operation (fixed frequency)		
LP.PA		**Flashing light during pause time**	no	no
	no	Function deactivated		
	S.	Flashing light will be on during the pause time too		
Strt		**Activation inputs (START and START P.)** This menu allows selecting input operation modes (see chapter 5.4)	StAn	StAn
	StAn	Standard mode		
	no	Start inputs from terminal board are disabled. Radio inputs operate in standard mode StAn		
	APCh	Open/Close command		
	PrES	Dead man operation		
	oroL	Timer mode		
StoP		**Stop Input**	no	no
	no	The input STOP is not available		
	ProS	The input STOP stops the gate: pressing the command START the gate continues the motion		
	inuE	The command STOP stops the gate: at the next START the gate starts moving in the opposite direction		
Fot1		**Photocell 1 input** This menu allows enabling the input for type 1 photocells, that is to say, photocells active both during the opening and closing phase	no	no
	no	Input disabled		
	APCh	Input enabled		
Fot2		**Photocell 2 input** This menu allows enabling the input for type 2 photocells, that is to say, photocells non active during the opening phase	CFCh	CFCh
	CFCh	Input enabled even at standstill gate too		
	Ch	Input enabled for the closing phase only **WARNING: If the photocell is damaged the gate is opened anyway.** **Before closing the test of the photocell (if enabled) will detect the fault and prevent the gate from closing.**		
	no	Input disabled		

PARAMETER	VALUE	DESCRIPTION	AntE	SCor
Ft.tE		**Test of the photocells** In order to achieve a safer operation for the user, the unit performs a photocells operational test, before a normal working cycle. If no operational faults are found, the gate starts moving. Otherwise, it will stand still and the flashing light will stay onfor 5 sec. The whole test cycle lasts less than one second	no	no
	no	Function deactivated		
	Si	Function activated		
ShAd		**Shaded area of the photocell 2** In some installations due to the garage, it is possible that the door gets in front of the photocells, interrupting the beam. If this is the case, the door cannot complete the closing cycle. With this function, it is possible to temporarily disable photocells 2 during the closing phase, so as to allow clear passage of the door. The photocells are deactivated when the door exceeds the stroke percentage set for the F.ShA limit (end of shaded area) and are re-activated when the door exceeds the stroke percentage set for the i.ShA limit (start of shaded zone). The limits of the shaded area are set automatically during the self-learning cycle (Chapter 12), as the function has been previously enabled by setting any value for the i.ShA and F.ShA limits (including 0). **NOTE: this function can only be activated if the following conditions are met:** • the control unit must only drive a motor (t.AP2 parameter = 0). • encoders or limit switches must be enabled • if the limit switch is enabled, the START ON OPENING must be disabled (St.AP parameter = no) **WARNING: Improper use of this function can affect the safety of using the automation. V2 recommends:** • Use this function only when the passage of the door in front of the photocell really is inevitable. • Set the closest possible shaded area limits	no	no
	no	Function deactivated		
	F.ShA 0 - 100	End of the shaded area: the photocells are deactivated when the door exceeds the stroke percentage set (0 = door closed / 100 = door open)		
	i.ShA 0 - 100	Start of the shaded area: the photocells are re-activated when the door exceeds the stroke percentage set (0 = door closed / 100 = door open)		
CoS1		**Safety edge 1 input** This menu allows enabling the input for type 1 safety edge, that is to say, fixed edges	no	no
	no	Input disabled		
	APCh	Input enabled in opening and closure		
	AP	Input enabled during the opening and disabled during the closure		
CoS2		**Safety edge 2 input** This menu allows enabling the input for type 2 safety edge, that is to say mobile edges	no	no
	no	Input disabled		
	APCh	Input enabled in opening and closure		
	Ch	Input enabled during the closing and disabled during the opening		

PARAMETER	VALUE	DESCRIPTION	AntE	SCor
Co.tE		**Test of the safety edges** This menu allows setting the method of control of the safety edges working **ATTENTION: if the edges are resistive, it is mandatory to activate the test**	no	no
	no	Test disabled		
	rES.	Test enabled for conductive rubber safety edges		
	Foto	Test enabled for optical safety edges		
FC.En		**Limit switch inputs**	no	StoP
	no	Limit switch inputs are disabled		
	rALL	Inputs enabled: the gate starts the slowdown phase near the limit switches		
	StoP	Inputs enabled: the gate stops near the limit switches		
EnCo		**Enabling encoder and adjustment of sensitivity** **NOTE:** The terminals dedicated to the encoder are the same of the limit switches; if the inputs of the two motors limit switches are enabled (parameter FC.En = StoP / rALL) the encoder is always disabled.	no	no
	no	Input disabled		
	1 - 4	This value indicates the sensitivity with which the unit interprets a slowdown of the motor in the presence of an obstacle (1 = less sensitive / 4 = more sensitive).		
i.Adi		**Enabling the ADI device** This menu makes it possible to enable operation of the device connected to the ADI connector. If an ADI normal (CL512K, WES-ADI, LUX2+) device is connected, select the Si value to enable the interface and proceed with programming of the device. If one or more ADI devices are connected, it is necessary to select SCAn value so that the unit detects the devices. During scanning, the display shows the number of detected devices. Once scanning is completed, the display shows ESC: - select ESC to exit from the menu without programming the devices; - press the UP or DOWN key to display the list of devices; hence select the device to be programmed and press MENU to enter the programming menu of the selected device. **NOTE**: The ADI devices programming menu is different for each device. Refer to the manual of the device. **ATTENTION**: Scanning must be performed only when new ADI devices are connected. To repeat programming of a device or to program another, simply select value Si to access the list of devices. Exiting the ADI device configuration menu returns to the i.Adi option	no	no
	no	Interface disabled		
	Si	Interface enabled: access to the programming menu of the ADI device, or to the connected ADI list of devices. **NOTE**: If the Si option is selected, but no device is connected, the display will show a series of dotted lines (- - - -).		
	SCAn	Learning about the connected ADI devices **NOTE:** This option is available only if on the ADI connector is inserted an ADI module. **NOTE:** Every time that an ADI device is added or removed, it is necessary to repeat the scanning procedure to update the unit.		

PARAMETER	VALUE	DESCRIPTION	AntE	SCor
rILA		**Motor Release on Mechanical Stop** When the gate halts against the mechanical stop, the motor is controlled for a fraction of a second in the opposite direction, decreasing the motor gear tension	no	no
	no	Function deactivated		
	Si	Function activated		
t.inA		**Maximum gate quiescent time** Some types of actuators (hydraulic actuators, mainly) tend to be loosened after some hours of quiescent time, jeopardizing the gate mechanical closing. Such menu allows setting the max. gate quiescent time from 1 to 8 hours.	no	no
	no	Function deactivated		
	1 - 8	In case the gate stays quiescent (closed) for a time longer than the set time, the control unit will close the gate for 10 seconds, so restoring an effective closing		
ASM		**Anti-skid** When an opening or closing operation is interrupted by a command or for the intervention of the photocell, the set-up time for the opposite movement would be excessive, so the control unit operates the motors only for the time necessary to recover the actually covered journey. This could be not su cient, particularly in the case of very heavy gates, as because of the inertia at the inversion moment the gate runs an extra space in the previous direction that the control unit is not able to take into account. If after an inversion the gate does not return exactly to the starting position, it is possible to set an anti-skid time that is added to the time calculated by the control unit in order to recover the inertia. **WARNING: If function ASM is disabled, the gate goes backward until it comes to the end stops. In this phase the control unit does not activate the slow down function before the end stops are reached and any obstacle that comes across after the inversion is considered as an end of stroke**	1.0"	1.0"
	0.5" - 1'00	Anti-skid time		
	no	Function deactivated		
SEnS		**Obstacle Sensor** This menu allows the sensitivity adjustment of the obstacle sensor over 10 levels	5	5
	1 - 10	The higher is the setup value, the prompter will be the control unit intervention if there is any obstacle. **WARNING: apart from any setup sensitivity value, this system will detect an obstacle only if the door is stopped; therefore, no obstacle braking the door without stopping it will be detected.** Obstacle detection will be performed only if the door moves at a normal speed. Both doors will stop and they will be given the command to go backwards for 3 seconds, to take out the obstacle detected. The following Start command will let the former door motion start again (if the parameter StoP = inuE movement starts again in the opposite direction). In case the slowing down phase has already begun, no obstacle will be detected and this kind of situation cannot be considered as dangerous since the motor, when working according to its slowing down function, will push the obstacle with a very low pressure		
	no	Function deactivated		

PARAMETER	VALUE	DESCRIPTION	AntE	SCor
Eu.di		**Display of the events** If this function is enabled, every time that an event changes the normal operation of the gate (coming into action of a safety, control by user, etc.) the display shows a message indicating the cause.	Si	Si
	Si	Function activated		
	no	Function deactivated		
Eu.M		**Storage level of the events**	3	3
	0 - 5	The events are stored in the list of events for diagnosis according to the set value in this menu: 0 Only the reset and the programming operations 1 Even the errors detected by the various tests (Err2, Err3, etc.). 2 Even the events that change the normal operation of the gate (coming into action of a safety, control by user, etc.). 3 Even the safeties that have prevented the activation operation cycle (stop, etc.). 4 Even the controls that have activated an operation cycle (start, etc.). 5 Even the automatic actions of the unit (En.SA and t.inA)		
FinE		**End of Programming** This menu allows to finish the programming (both default and personalized) saving the modified data into memory. You must exit from programming mode through this menu item if you do not want to lose your configuration.	no	no
	no	It does not exit from the program menu		
	Si	It exits from the program menu by storing the setup parameters		

17 - OPERATION DEFECTS

This paragraph shows some possible operation defects, along with their cause and applicable remedy.

Some anomalies are signalled using a message on the display, others with flashing signs or the leds assembled on the control unit.

NOTE: following an anomaly, the error message displayed on the display stays active until the control unit receives a START command or the MENU key is pressed.

DISPLAYING	DESCRIPTION	SOLUTION
MAINS led does not switch on	It means that there is no voltage on control unit card.	**1.** Before acting on the control unit, disconnect through the disconnecting switch on the power line and remove the power supply terminal. **2.** Be sure that there is no voltage break upstream the control unit. **3.** Check whether the fuse is burnt-out, if so replace it with same value.
OVERLOAD led is on	It means that there is an overload on accessory power supply.	**1.** Remove the extractable part containing terminals **E1 - E5** and **Z1 - Z6** . OVERLOAD led will switch off. **2.** Remove the overload cause. **3.** Reinsert the terminal board extractable part and check that this led is not on again.
Too long pre-blinking	When a Start command is given and the blinker switches on immediately but the gate is late in opening	It means that the setup cycle count down expired and the control unit shows that service is required (chapter 13.1)
The display shows FoE1	When a start command is given the gate won't open. It means that intervention of photocell FOT1 prevents gate movement.	**1.** Check there are no obstacles between the photocells and FOT1. **2.** Ensure the photocells are powered and working: interrupt the ray and check that the photocell segment on the display changes position.
The display shows FoE2	When a start command is given the gate won't open. It means that intervention of photocell FOT2 prevents gate movement.	**1.** Check there are no obstacles between the photocells and FOT2. **2.** Ensure the photocells are powered and working: interrupt the ray and check that the photocell segment on the display changes position
The display shows CoS1	When a start command is given the gate won't open. It means that intervention of safety edge COS1 prevents gate movement.	**1.** Check the safety edge COS1 is not pressed or damaged. **2.** Ensure safety edge COS1 is connected correctly: activate the safety edge and check the safety edge section on the display changes position.
The display shows CoS2	When a start command is given the gate won't open. It means that intervention of safety edge COS2 prevents gate movement.	**1.** Check the safety edge COS2 is not pressed or damaged. **2.** Ensure safety edge COS2 is connected correctly: activate the safety edge and check the safety edge section on the display changes position.
The display shows StoP	When a start command is given the gate won't open. It means that STOP input prevents gate movement.	**1.** Check the STOP button is not pressed. **2.** Ensure the button is working correctly.
The display shows i.Adi	When a start command is given the gate won't open. It means one of the safety devices has activated managed via the ADI interface.	**1.** Check the safety switches managed by the ADI interface are working correctly. **2.** Ensure the ADI mode works correctly.

DISPLAYING	DESCRIPTION	SOLUTION
The display shows Err2	When a start command is given the gate won't open. It means that TRIAC test failed.	**1.** Check the motors are correctly connected. **2.** Check the thermal protection on the motor has not activated. **3.** If motor M2 is not connected, ensure the menu item t.AP2 is set to 0.0". **4.** If no problems are detected on the motors, contact the V2 technical support service to send the control unit for repair.
The display shows Err3	When a start command is given the gate won't open. It means that the photocell test failed.	**1.** Be sure that no obstacle interrupted the photocell beam when the Start command was given. **2.** Be sure that photocells, as enabled by their relevant menus, have been installed actually. **3.** If you have photocells 2, be sure that Fot2 menu item is on CF.Ch. **4.** Be sure that photocells are powered and working: interrupt the ray and check that the photocell segment on the display changes position. **5.** Ensure the photocells are connected correctly, as shown in the chapter 5.5
The display shows Err4	When a Start command is given and the gate does not open (or does a partial opening). It means that the limit switche has not been released or that both limit switches are active.	Make sure that the limit switches are correctly connected and the gate, opening, let the limit switch open. If the limit switches are not used set the parameter FC.En = no
The display shows Err5	When a start command is given the gate won't open. It means that the test of the safety edges failed.	**1.** Make sure that the menu relative to the test of the facets for cables (Co.tE) is configured correctly. **2.** Make sure that the safety edges enabled by menu are actually installed. **3.** Check the safety edges are correctly connected as indicated in chapter 5.6.
The display shows Err7	Encoder error	Check the connection of the encoder
The display shows Err8	When executing a self-learning function the control is refused. It means that the setting of the control unit is not compatible with the requested function.	1. Check the Start inputs are enabled in standard mode (Strt menu set on StAn). 2. Check the ADI interface is disabled (i.Adi menu set to no).
The display shows Err9	It means that programming was locked by means of the programming lock key CL512K (code 161266).	To change the settings it is necessary to insert in the connector of the ADI interface the same key used to activate the programming lock, and unlock the device.
The display shows Er10	When a start command is given the gate won't open. This means that the ADI module function test failed.	**1.** Check the ADI module is correctly inserted **2.** Check the ADI module is not damaged and working properly
The display shows Er13	The self-diagnosis circuit has detected a malfunction that prevents the safe operation of the automation	Contact the V2 technical assistance service to send the control unit for repair
The display shows Er14	The self-diagnosis circuit has detected an error in the configuration parameter table	Enter the configuration menu, carefully check all the parameters and correct any errors. If the error persists, contact the V2 technical assistance service to send the control unit for repair

Compatible Equipment

The equipment listed below does not affect the warranty of the control panel and have been tested and approved for use.Limited warranty is applied to the control panel when used with third party equipment.

Sensors
- APC-PE2000
- APC-RR-11
- APC-LD1-24V

Receivers
- APC-Connect 4
- APC-RX4
- APC-WF-CH1

Remotes
- APC-RC4S
- APC-RC4SV
- APC-RC450S

Keypads
- APC-KP1-C
- APC-KP2W
- APC-WF-KP

Solar Equipment
- APC Sun Power
- APC-SP24-20W
- APC-SP24-40W
- APC-SP24-60W

Courtesy Light
- APC-ULA

Push Buttons
- APC-PBS (K/KW)
- APC-PBD (K/KW)

Electric Locks
- EL-12V

External Transformers
- PS-24-10

Warranty Terms

APC WARRANTY

APC Automation Systems warrants the original purchasers or the APC gate(s) opening system for a period of twelve months from the date of purchase (not installation), the product shall be free of defects in materials and workmanship under normal use.
During the warranty period, APC shall, as its option, repair or replace any defective product upon return of the product to its factory, at no charge for labour and materials.
Any replacement and/or repaired parts are warranted for the remainder of the original warranty, The original owner must promptly notify APC in writing that there is defect in material or workmanship, such written notice must be received in all events prior to expiration of the warranty.

International Warranty

APC shall not be responsible for any freight fees, taxes or customs fees.

Warranty Procedure

To obtain service under this warranty, AND AFTER CONTACTING APC, please return the item(s) in question to the point of purchase.
All authorized distributors and dealers have a warranty program, anyone returning goods to APC must first obtain an authorization number.
APC will not accept any shipment for which prior authorization has not been used.

Conditions to Void Warranty

This warranty applies only to defects in repairs and workmanship relating to normal use. It does not cover:
- Damage incurred in shipping or handling
- Damage caused by disaster such as fire, flood, wind, earthquake or lightning
- Damage due to causes beyond the control of APC such as excessive voltage, mechanical shock or water damage
- Damage caused by unauthorized attachment, alterations, modifications, or foreign objects.
- Damage caused by peripherals (unless such peripherals were supplied by APC)
- Defects caused by failure to provide a suitable installation environment for the products
- Damage caused by usage of the products for purpose other than those for which it was designed.
- Damage from improper maintenance
- Damage arising out of any other abuse, mishandling, and improper application of the products.

Under no circumstances shall APC be liable for any special, incidental, or consequential damages based upon breach of warranty, breach of contract, negligence, strict liability, or any other legal theory. Such damages include, loss of profits, loss of the product or any associated equipment, cost of capital, cost of substitute or replacement equipment, facilities or services, down time, purchaser's time, the claims of third parties, including customers, and injury to property.

Disclaimer of Warranties

This warranty contains the entire warranty and shall be in lieu of any and all other warranties, whether expressed or implied (including all implied warranties of merchantability or fitness for a particular purpose). And of all other obligations or purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other
warranty or liability concerning this product.

Out of Warranty Repairs

APC will at its option repair or replace out-of-warranty products which are returned to its factory according to the following conditions.
Anyone returning goods to APC must first obtain an authorization number.
APC will not accept any shipment whatsoever for which prior authorization has not been obtained.
Products which APC determines to be repairable will be repaired and returned. A set fee which APC has been predetermined and which may be revised from time to time will be charged for each unit repaired. Products which APC determines not repairable will be replaced by the nearest equivalent product available at that time. The current market price for the replacement product will be charged for each replacement unit.