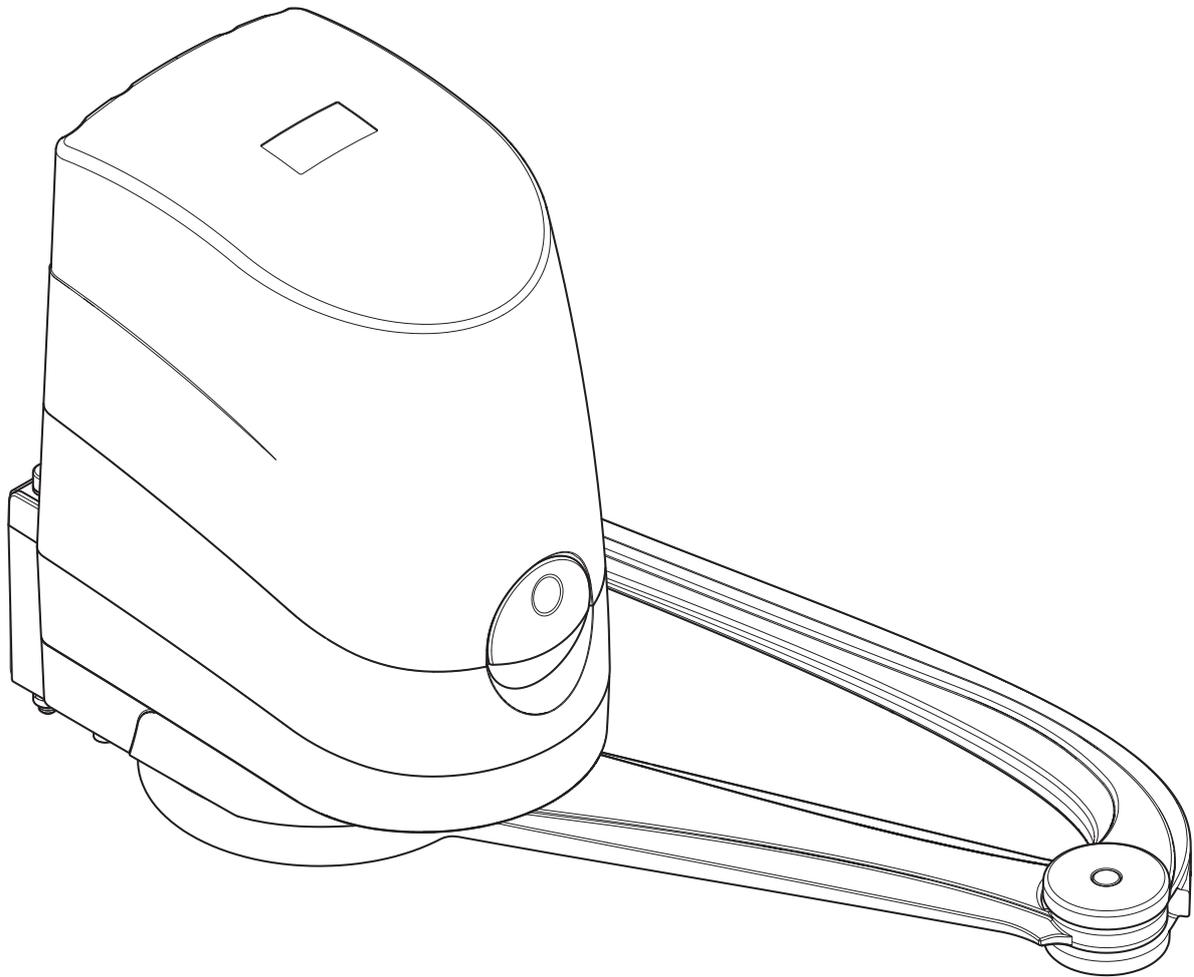




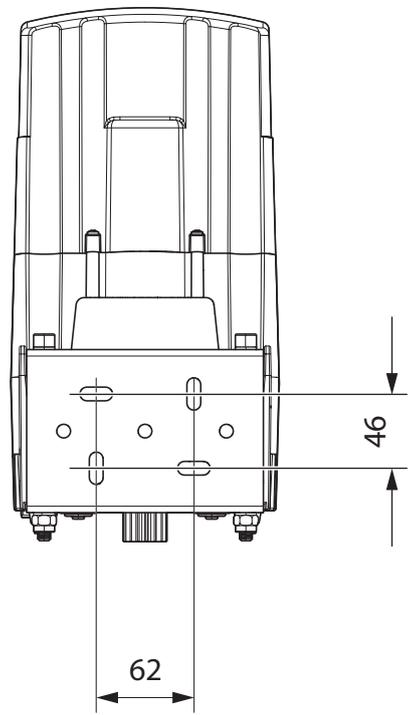
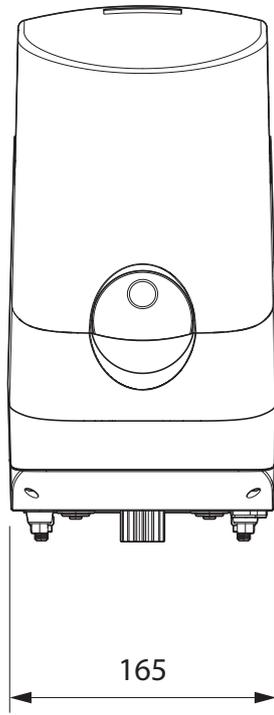
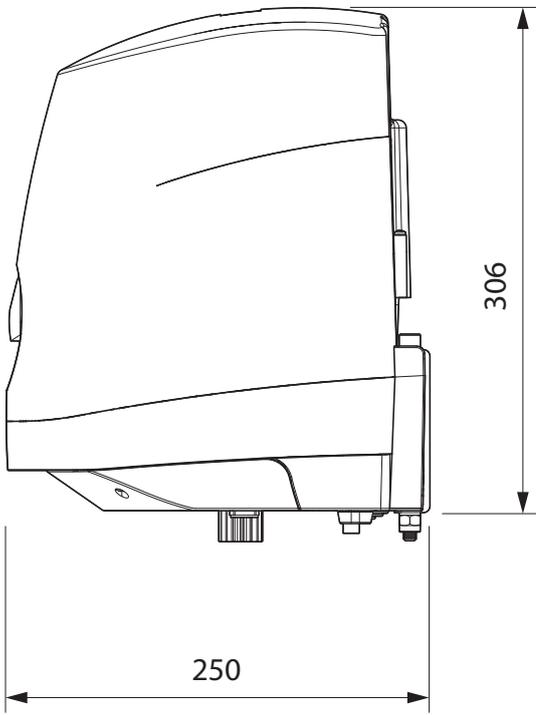
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ZORUS



GB

**IRREVERSIBLE
ELECTROMECHANICAL PIVOTING
ARM ACTUATOR FOR SWING GATES**



INDEX

1 - GENERAL SAFETY INFORMATION	36
1.1 - TECHNICAL ASSISTANCE SERVICE	37
1.2 - PRELIMINARY CHECKS and IDENTIFICATION OF THE TYPE TO BE USED	38
1.3 - EU DECLARATION OF CONFORMITY	38
2 - TECHNICAL DATA	38
USE LIMITATIONS	38
3 - INSTALLATION OF THE MOTOR	39
3.1 - INSTALLATION LAYOUT	39
3.2 - INSTALLATION OF THE REAR FIXING BRACKET	40
3.3 - SECURING THE GEAR MOTOR TO THE FIXING BRACKETS	41
3.4 - INSTALLATION OF THE FRONT FIXING BRACKET	41
3.5 - INSTALLATION AND ADJUSTMENT OF THE MOTOR LIMIT SWITCHES	42
3.6 - ELECTRICAL CONNECTIONS	42
4 - CONTROL UNIT	44
4.1 - ENERGY SAVING FUNCTION	44
4.2 - INSTALLATION	44
4.3 - CONNECTION OF THE MOTOR	44
4.4 - EXTERNAL PHOTOCCELL CONNECTION	45
4.5 - INTERNAL PHOTOCCELL CONNECTION	45
4.6 - CONNECTING SAFETY RIBBONS	45
4.7 - ACTIVATION INPUTS	46
4.8 - STOP	46
4.9 - LOW VOLTAGE LIGHT OUTPUT	46
4.10 - COURTESY LIGHTS	46
4.11 - LOCK	47
4.12 - EXTERNAL AERIAL	47
4.13 - PLUG IN RECEIVER	47
4.14 - ADI INTERFACE	47
4.15 - POWER SUPPLY	47
4.16 - BATTERY POWER	47
4.17 - ELECTRICAL CONNECTION SUMMARY	48
5 - CONTROL PANEL	49
5.1 - DISPLAY	49
5.2 - USE OF THE KEYS FOR PROGRAMMING	50
6 - INITIALISING THE CONTROL UNIT	50
7 - ACCESSING THE CONTROL UNIT SETTINGS	52
8 - RAPID CONFIGURATION	52
8.1 - POWER ADJUSTMENT	53
8.2 - OBSTACLE SENSOR ADJUSTMENT	53
8.3 - OPERATIONAL LOGIC	54
8.4 - EXITING RAPID CONFIGURATION	54
9 - LOADING THE DEFAULT PARAMETERS	55
10 - WORKING TIME SELF-TRAINING	56
11 - READING OF CYCLE COUNTER	57
11.1 - SIGNAL OF SERVICE REQUIRED	57
12 - PROGRAMMING THE CONTROL UNIT	58
13 - OPERATION DEFECTS	64
14 - TESTING AND START-UP	66
15 - MAINTENANCE	66
16 - DISPOSAL	66

AUTOMATION DEVICE INSTALLERS MANUAL

1 - GENERAL SAFETY INFORMATION

 **Prior to proceeding with installation, it is essential the instructions be read in full, since they contain important information regarding safety, installation, use and maintenance.**

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

EN 60204-1, EN 12445, EN 12453, EN 13241-1, EN 12635

- The installer must provide for a device (es. magnetothermal 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).
- The plastic case has an IP44 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 (Machine Directive 2006/42/CEE, Annex IIA).
- Also the automation upstream electric system shall comply with the laws and rules in force and be carried out workmanlike.
- 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.
- For correct installation of the system, we recommend following the instructions issued by UNAC very carefully
- 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.
- Anything not expressly described in these instructions is prohibited; unforeseen uses may be a source of danger to people and property.
- Do not install the product in explosive environments and atmospheres: the presence of inflammable gases or fumes is a serious safety hazard.
- Do not make any modifications to any part of the automation device, or the accessories connected to it, unless described in this manual.
- Any other modifications will void the warranty on the product.
- The installation steps should be conducted so as to avoid rainy weather, which can expose electronic circuits to dangerous water seepage.
- All operations requiring the casing of the device to be opened should be performed with the control unit disconnected from the electricity supply and with a warning notice displayed, for example: "CAUTION, MAINTENANCE IN PROGRESS".
- Avoid exposing the device close to sources of heat and flame.

- In the event of interventions on automatic or differential breakers or fuses, it is essential that faults be identified and resolved prior to resetting. In the case of faults that cannot be resolved using the information to be found in this manual, consult the V2 customer assistance service.
- V2 declines all responsibility for failure to comply with good construction practice standards in addition to structural deformation of the gate that might occur during use.
- V2 reserves the right to make modifications to the product without prior warning.
- Installation/maintenance personnel should wear individual protection devices (IPDs), such as overalls, safety helmets, boots and gloves.
- The ambient operating temperature should be that indicated in the technical characteristics table.
- The automation device should be shut down immediately in the event of any anomalous or hazardous situation; the fault or malfunction should be immediately reported to the person responsible.
- All safety and hazard warnings on the machinery and equipment should be complied with.
- Electromechanical actuators for gates are not intended to be used by people (including children) with diminished physical, sensory or mental capacity, or lacking in experience or knowledge, unless they are under supervision or have been instructed in use of the actuator by a person responsible for safety.
- DO NOT introduce objects of any kind into the compartment below the motor cover.

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.



1.1 - TECHNICAL ASSISTANCE SERVICE

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.

1.2 - PRELIMINARY CHECKS AND IDENTIFICATION OF THE TYPE TO BE USED

The automation device should not be used until installation, as specified in "Testing and start-up", has been performed. It should be remembered that the device does not compensate for defects caused by improper installation, or poor maintenance, thus, prior to proceeding with installation, ensure that the structure is suitable and meets current standards and, if necessary, perform any structural modifications aimed at the implementation of safety gaps and the protection or segregation of all crushing, shearing and transit zones, and verify that:

- The gate has no friction points, either during closing or opening.
- The gate must be equipped with mechanical stoppers.
- The gate is well balanced, i.e. there is no tendency to move spontaneously when stopped in any position.
- The position identified for fixing the motor reducer allows easy and safe manual manoeuvring, compatible with the size of the motor reducer itself.
- The support on which the automation device will be fixed is solid and durable.
- The mains power supply to which the automation device is connected has a dedicated safety earthing system and differential breaker with tripping current less than or equal to 30 mA (the breaker gap distance should be greater than or equal to 3 mm).

Warning: The minimum safety level depends on the type of use; please refer to the following outline:

TYPE OF ACTIVATION COMMANDS	CLOSURE USE TYPE		
	GROUP 1 Informed people (use in private area)	GROUP 2 Informed people (use in public area)	GROUP 3 Informed people (unlimited use)
Man-present command	A	B	Not possible
Remote control and closure in view (e.g. infrared)	C or E	C or E	C and D or E
Remote control and closure not in view (e.g. radio)	C or E	C and D or E	C and D or E
Automatic control (e.g. timed closure control)	C and D or E	C and D or E	C and D or E

GROUP 1 - Only a limited number of people are authorised for use, and closure is not in a public area. Examples of this type are gates inside business premises, where the sole users are employees, or a part of them who have been suitably informed.

GROUP 2 - Only a limited number of people are authorised for use, but in this case, closure is in a public area. An example of this may be a company gate that accesses onto a public street, and which is only used by employees.

GROUP 3 - Anyone can use the automated closure, which is thus located on public land. For example the access gate to a supermarket or an office, or a hospital.

PROTECTION A - Closure is activated by means of a control button with the person present, i.e. with maintained action.

PROTECTION B - With the person present, closure is activated by a command controlled by means of a key-switch or the like, in order to prevent use by unauthorised persons.

PROTECTION C - Restricts the force of the leaf of the door or gate. I.e., in the case of the gate striking an obstacle, the impact force must fall within a curve established by the regulations.

PROTECTION D - Devices, such as photocells, capable of detecting the presence of people or obstacles. They may be active on just one side or on both sides of the door or gate.

PROTECTION E - Sensitive devices, such as footboards or immaterial barriers, capable of detecting the presence of a person, and installed in such a way that the latter cannot be struck in any way by a moving leaf or panel. These devices should be active within the entire "danger zone" of the gate. The Machinery Directive defines "Danger Zone" as any zone surrounding and/or near machinery where the presence of an exposed person constitutes a risk to the health and safety of that person.

The risk analysis should take into consideration all danger zones for the automation device, which should be appropriately protected and marked.

In a clearly visible area, apply a sign with information identifying the motorised door or gate.

The installer should provide the user with all the information relating to automatic operation, emergency opening and maintenance of the motorised door or gate.

1.3 - EU DECLARATION OF CONFORMITY AND DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINE

Declaration in accordance with Directives: 2014/35/UE (LVD); 2014/30/UE (EMC); 2006/42/CE (MD) ANNEX II, PART B

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 partly completed machinery model(s): ZORUS2-S, ZORUS2-M, ZORUS4-S, ZORUS4-M

Description: electromechanical actuator for gates

- is intended to be installed on gates, to create a machine according to the provisions of the Directive 2006/42/EC. The machinery must not be put into service until the final machinery into which it has to be incorporated has been declared in conformity with the provisions of the Directive 2006/42/EC (annex II-A).

- is compliant with the applicable essential safety requirements of the following Directives:
Machinery Directive 2006/42/EC (annex I, chapter 1)
Low Voltage Directive 2014/35/EU
Electromagnetic Compatibility Directive 2014/30/EU
Directive ROHS3 2015/863/EU

The relevant technical documentation is available at the national authorities' request after justifiable request to:

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

The person empowered to draw up the declaration and to provide the technical documentation:

Sergio Biancheri
Legal representative of V2 S.p.A.
Racconigi, il 01/06/2019



2 - TECHNICAL DATA

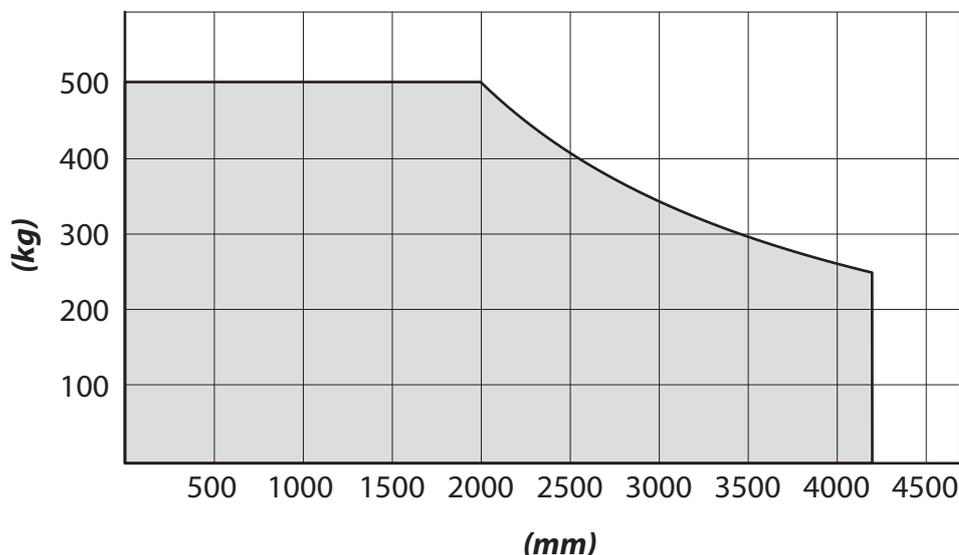
		ZORUS2-S	ZORUS2-M	ZORUS4-S	ZORUS4-M
Power supply	Vac / Hz	24 Vdc	230 - 50	24 Vdc	230 - 50
Maximum power (2 motors)	W	280		350	
Speed	Rpm	1,5		1,5	
Torque	N m	650		760	
Working temperature	°C	-20 ÷ +55		-20 ÷ +55	
Working cycle	%	80		80	
Motor weight	Kg	7,5	7,5	7,5	7,5
Protection	IP	44			

2.1 - USE LIMITATIONS

Before installing the product, check that the size and the weight of the gate leaf are within the limits stated in chart.

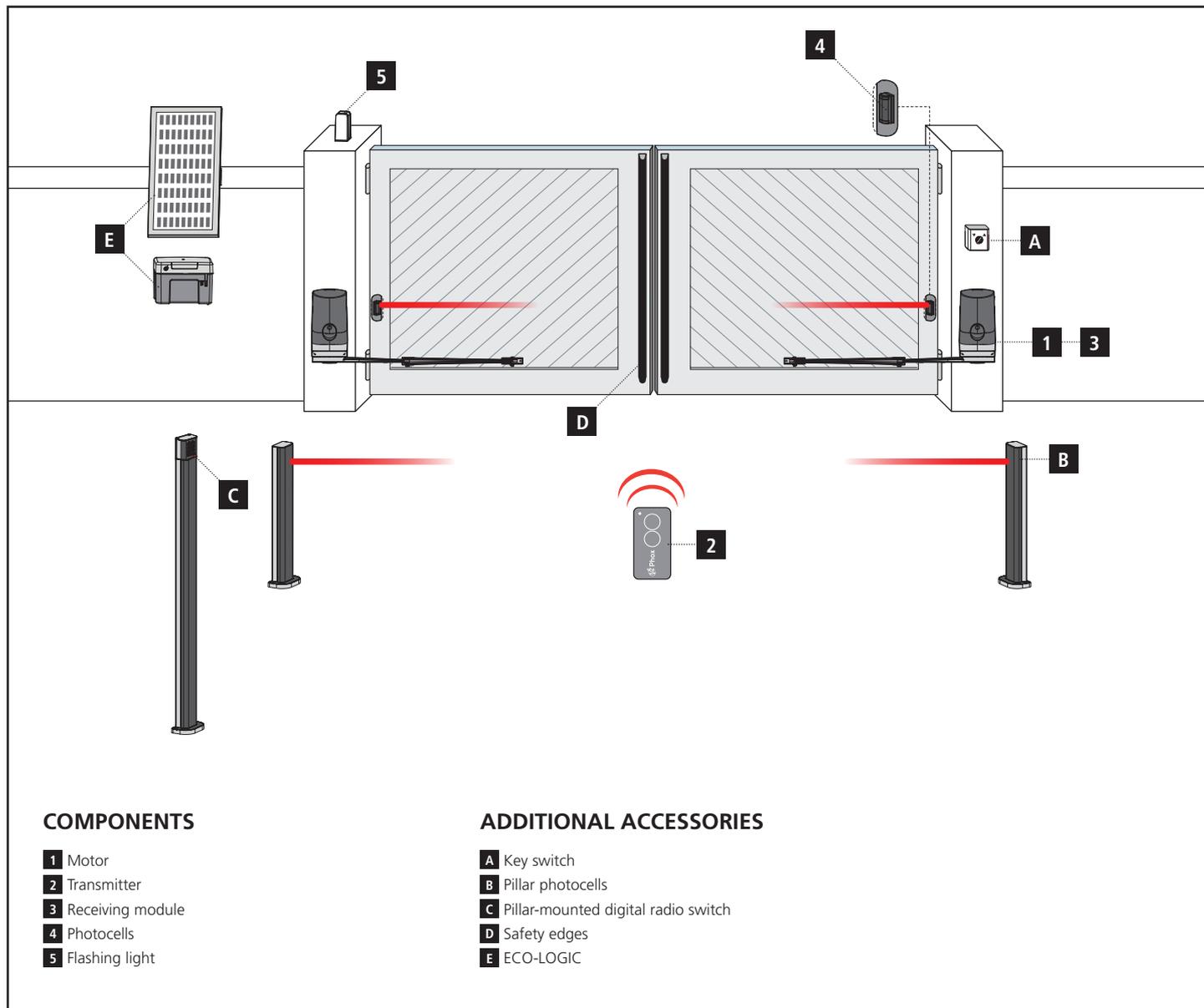
kg - Maximum gate leaf weight
mm - maximum gate leaf length

 **WARNING! The single leaf must not exceed 4.2m in length**



3 - INSTALLATION OF THE MOTOR

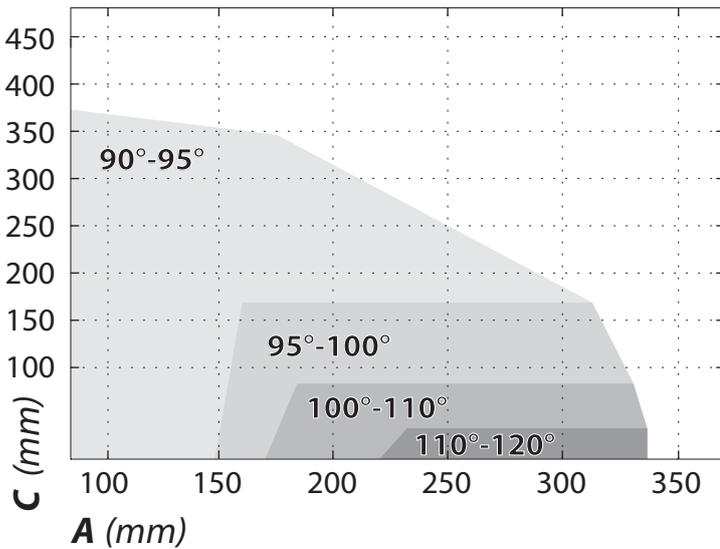
3.1 - INSTALLATION LAYOUT



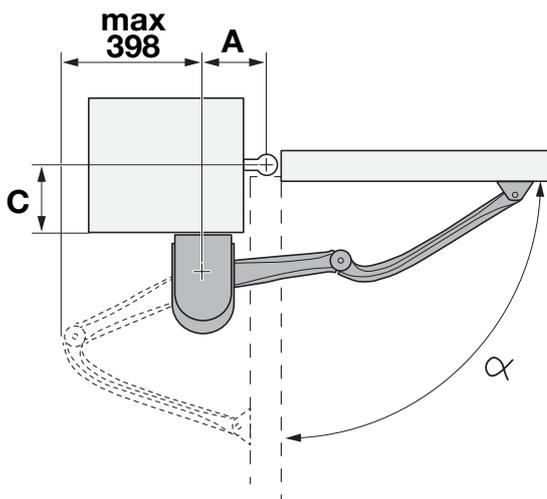
LENGTH OF THE CABLE	< 10 metres	from 10 to 20 metres	from 20 to 30 metres
Power supply 230V	3G x 1,5 mm ²	3G x 1,5 mm ²	3G x 2,5 mm ²
SLAVE motor power supply	2G x 1,5 mm ²	2G x 1,5 mm ²	2G x 2,5 mm ²
Photocells (TX)	2 x 0,5 mm ²	2 x 0,5 mm ²	2 x 0,5 mm ²
Photocells (RX)	4 x 0,5 mm ²	4 x 0,5 mm ²	4 x 0,5 mm ²
Key switch	2 x 0,5 mm ²	2 x 0,5 mm ²	2 x 0,5 mm ²
Flashing light	2 x 1,5 mm ²	2 x 1,5 mm ²	2 x 1,5 mm ²
Antenna (integrated into the flashing light)	RG174	RG174	RG174
ECO-LOGIC (accumulator unit)	2 x 1,5 mm ²	-	-
ECO-LOGIC (solar panel)	2 x 1 mm ²	-	-

3.2 - INSTALLATION OF THE REAR FIXING BRACKET

Calculate the rear bracket position using chart.



This chart is used to define distances A and C and the leaf maximum opening angle.



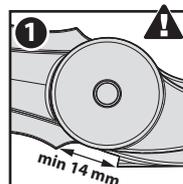
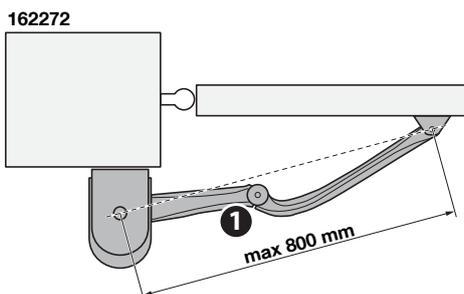
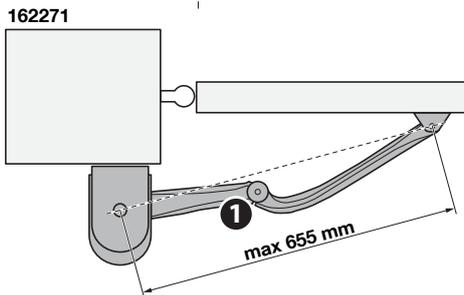
Installation examples

162271

A	C	α
140	30	90
250	30	120
140	80	90
190	80	100
140	130	90
170	130	100
140	160	90
160	160	95
140	200	90
160	200	95

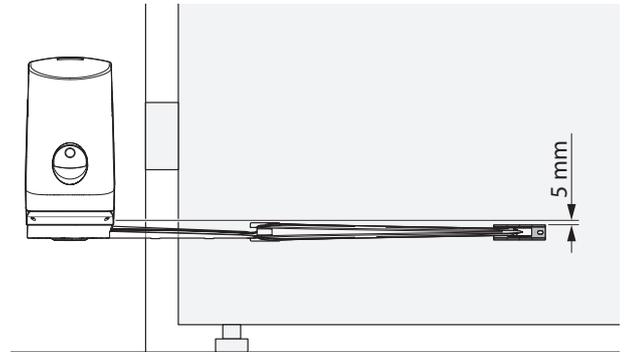
162272

A	C	α
140	30	90
250	30	110
140	80	90
185	80	100
140	130	90
170	130	95
140	160	90
160	160	95
140	200	90
150	200	90
140	240	90
150	240	90
140	280	90
170	280	90
140	320	90
170	320	90

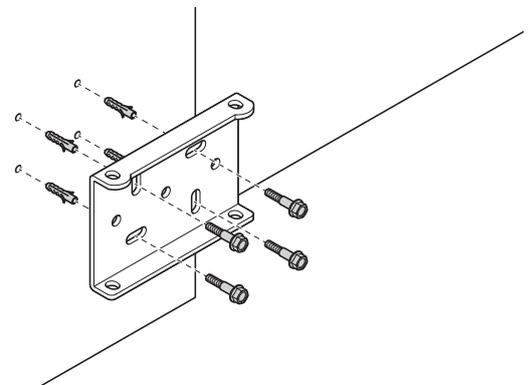


1. Measure value "C", then trace a straight horizontal line in chart 1 against the obtained value. Select a point in the line, taking into account the desired opening angle, suitable for the column.
2. Trace a vertical line starting from the point identified and obtain value A.
3. Before proceeding with the installation, make sure that value A allows to fix the rear bracket, otherwise select another point on the chart.
4. Finally, to fix the bracket on the leaf, refer to the maximum dimensions of the arm.
Failure to comply with the bracket installation distances may lead to automation operation faults, such as:
 - Cyclical movements and accelerations at some positions of the stroke
 - Increased motor noise
 - Limited opening, or no opening at all (in case of counter-lever fixed motor)

⚠ WARNING! Before fixing the rear bracket, make sure that the front bracket will be fixed to a solid position of the gate leaf; the front bracket will have to be secured at a different height than the rear bracket.



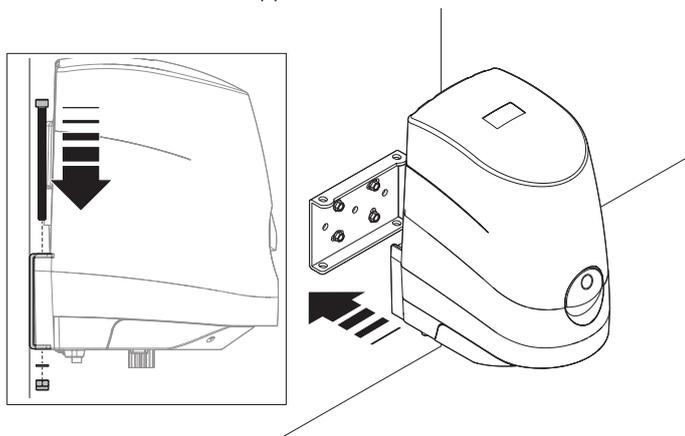
5. At this point, mark on the leaf and on the wall the holes of the brackets which will then be used to fix the two brackets
6. Fix the rear bracket of the motor to the wall complying with the dimensions seen previously



3.3 - SECURING THE GEAR MOTOR TO THE FIXING BRACKETS

Secure the gear motor to the rear bracket:

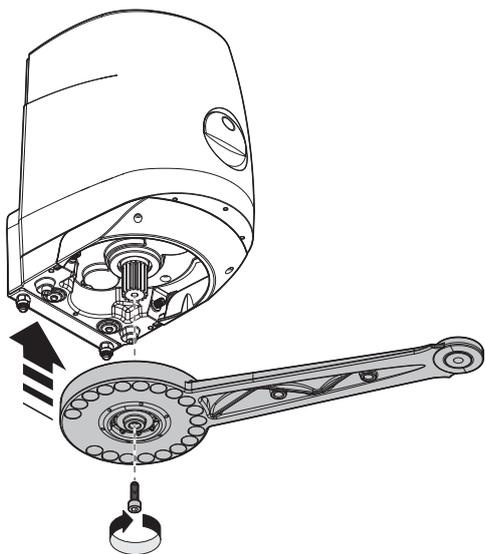
1. Secure the gear motor to the bracket using the screws, washers and nuts supplied



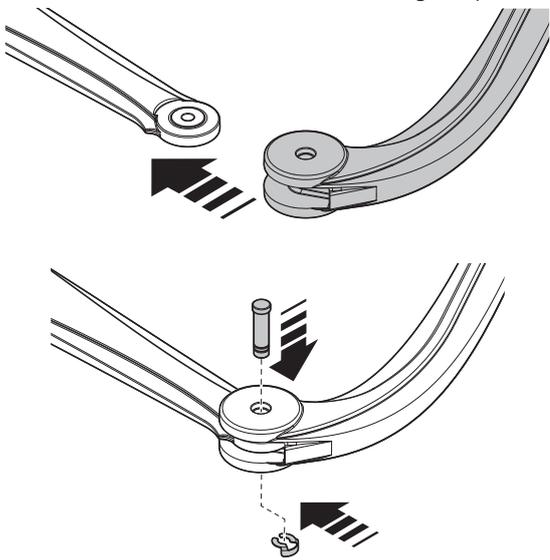
2. Fully tighten the nuts to the screws

Install the arms onto the motor:

1. Secure the arm onto the gear motor using the screw

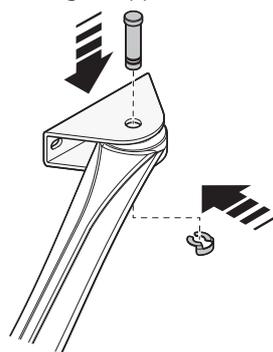


2. Fix the two arms to each other using the pin and the seger



Secure the gear motor to the front bracket:

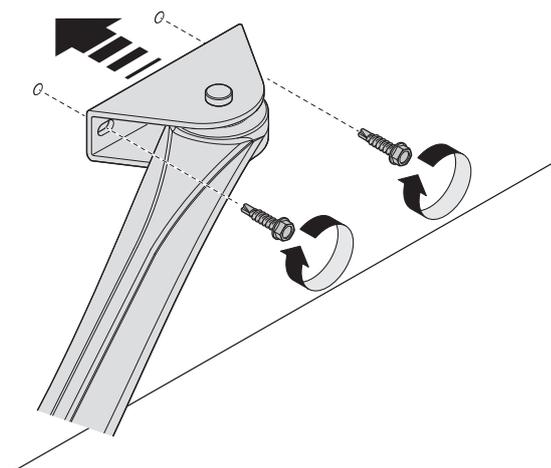
1. Secure the gear motor arm to the bracket using the pin and seger supplied



2. Tighten the seger fully onto the pin seat

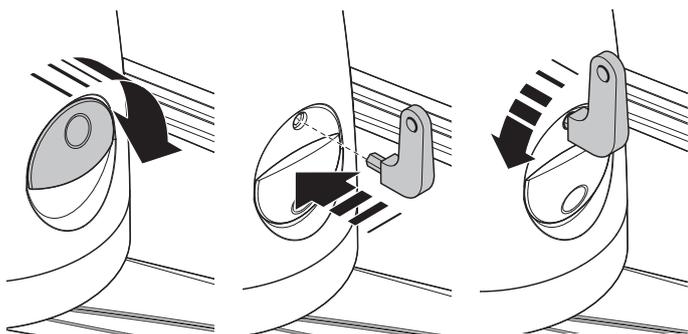
3.4 - INSTALLATION OF THE FRONT FIXING BRACKET

1. The front bracket must be secured to gate leaf
2. Define the front bracket position height
3. Fix the bracket to the solid section of the gate leaf

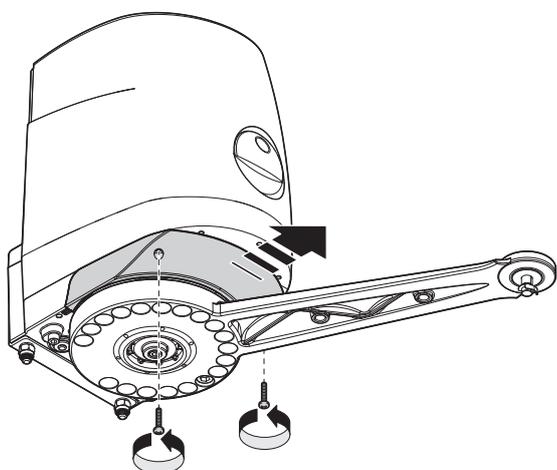


3.5 - INSTALLATION AND ADJUSTMENT OF THE MOTOR LIMIT SWITCHES

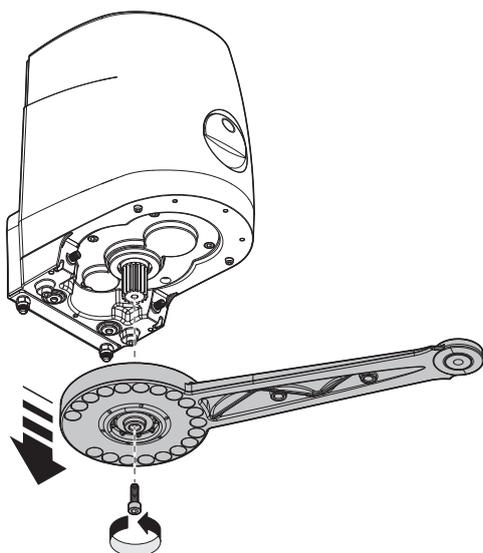
1. Release the gear motor



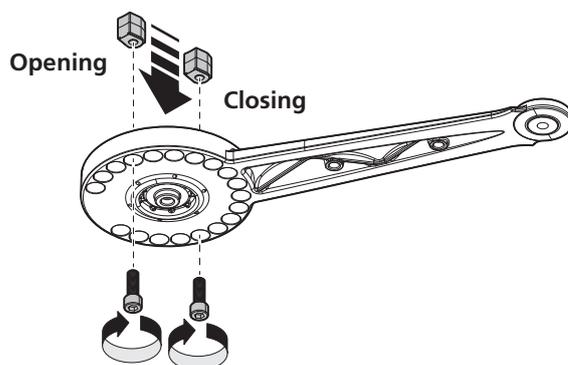
2. Remove the 2 screws underneath the motor and remove the cover



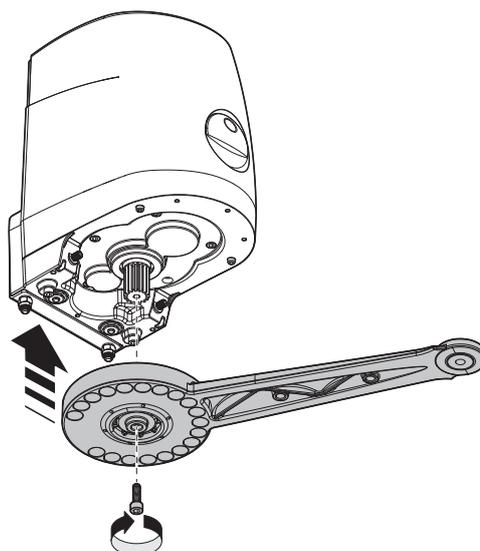
3. Unscrew the screw in the motor arm and remove it



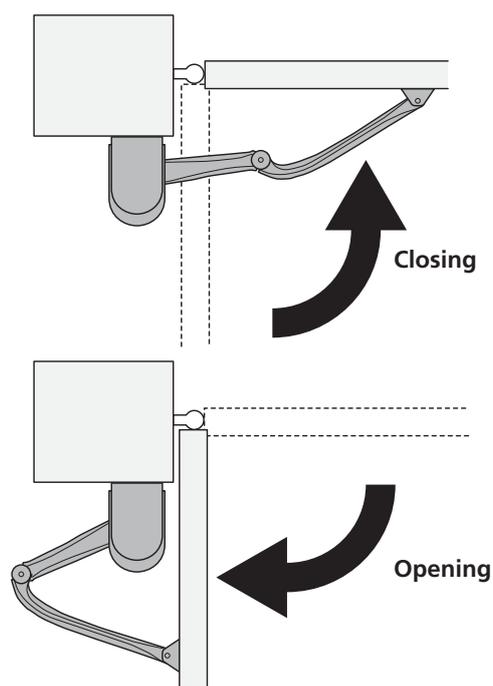
4. Fix the limit switches on the motor arm; these must also be installed in the presence of mechanical stops on the ground



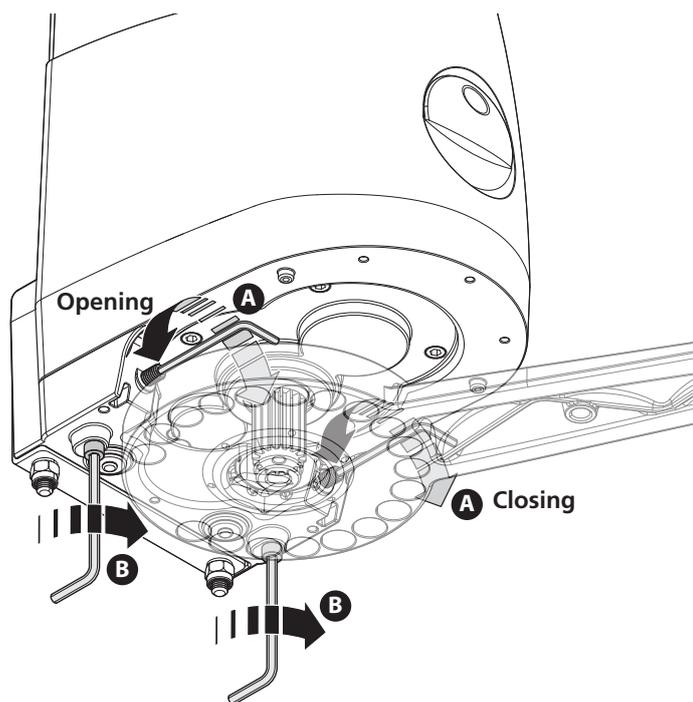
5. At this point re-install the arm onto the motor



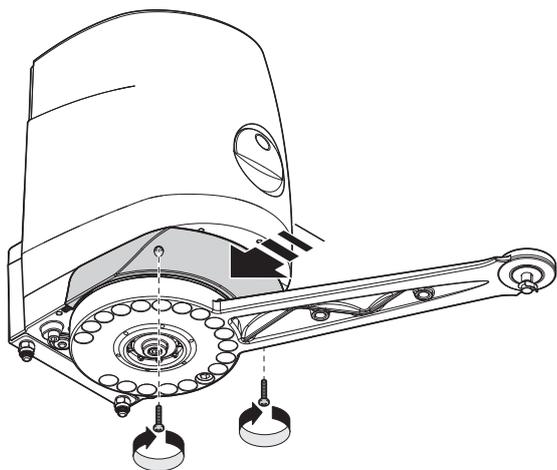
6. Manually verify that, when opening and closing, the gate leaf stops at the desired points



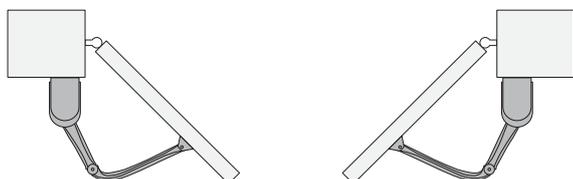
7. By screwing or unscrewing the two screws (A) on the motor, the two limit switches can be adjusted; then, using the two screws (B) block the two adjusting screws



8. Replace the cover and tighten the two screws



9. Finally, secure the gear motor by turning the release key
 10. For the assembly of the second motor, carry out the same operations proceeding in reverse order for the adjustment of the limit switches
 11. After installing and adjusting the motors, position the leaves halfway along their stroke so that, after making the electrical connections, they can learn the opening and closing procedures correctly

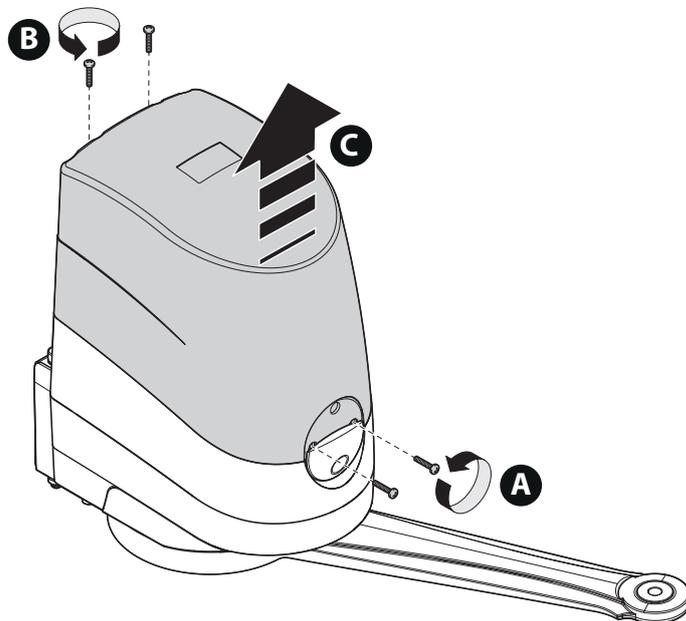


3.6 - ELECTRICAL CONNECTIONS

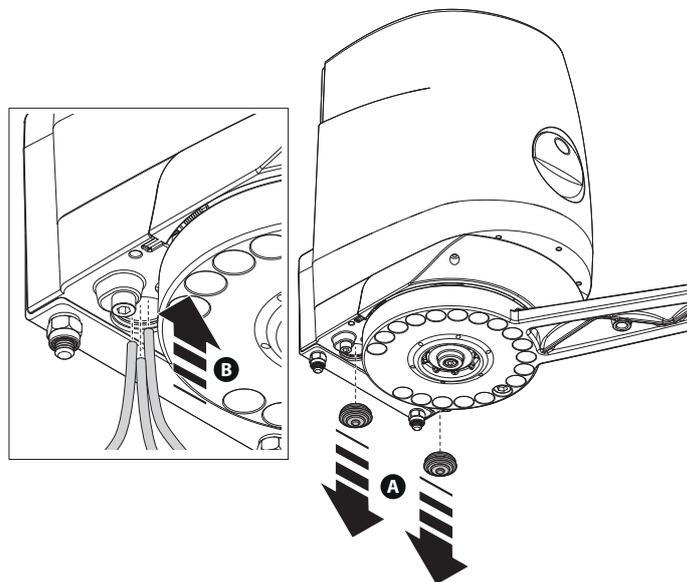
⚠ WARNING!

- An incorrect connection can cause faults or dangerous situations; therefore, scrupulously comply with the indicated connections.
- Perform the connection operations with the power supply disconnected.

1. Remove the gear motor cover



2. Loosen the cable gland of the gear motor and insert the connection cables



3. Bring the cables to the top of the motor near the control unit
 4. To connect the two motors, refer to the part of the manual relating to the "Control unit"

4 - CONTROL UNIT

PD12 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:

- Power supply protected from short circuits within the controller, on the motors and on the connected accessories.
- Adjustment of the power by partializing the current.
- Detecting obstacles by monitoring the current on the motors (current sensing probe)
- Automatic learning of the operation time
- Obstacle sensor: a system allowing detection of whether movement of the gate is impeded by an obstacle. This system is based on measurement of the current absorbed by the motor: an unexpected increase in current absorption indicates the presence of an obstacle.
- Tests for safety devices (photocells and safety ribbons) before each opening.
- 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.
- The device can operate without mains power, by using the optional battery pack (code 161212).
- Low voltage output that can be used for a signal light or a 24V flashing light.
- Auxiliary relay with programmable logic for courtesy light, flashing light or other use.
- ENERGY SAVING function

4.1 - ENERGY SAVING function

This function is useful for reducing the energy consumption of the automation device while in stand-by mode.

If the function is enabled, the control unit will enter ENERGY SAVING mode under the following conditions:

- 5 seconds after completion of an operational cycle
- 5 seconds after an opening (if automatic closure is not enabled)
- 30 seconds after exiting the programming menu

In ENERGY SAVING mode, power to the accessories, display and flashing lights is deactivated.

ENERGY SAVING mode is exited:

- If an operational cycle is activated
- If one of the menus is accessed

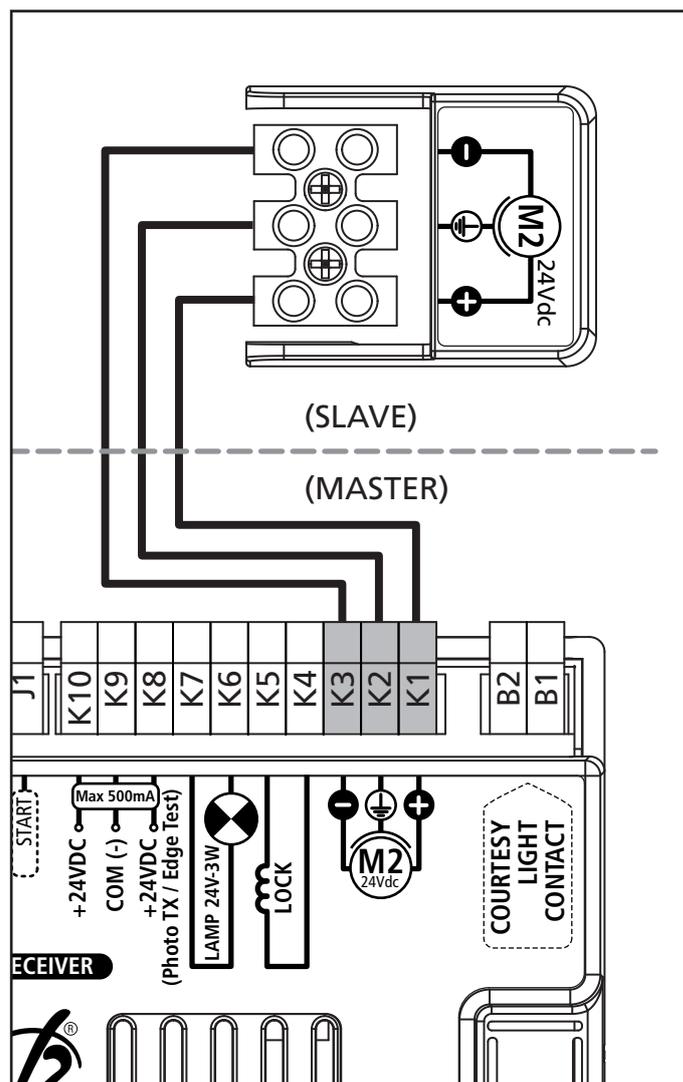
4.2 - INSTALLATION

Installation of control unit and safety devices must be carried out with power disconnected.

4.3 - CONNECTION OF THE MOTOR

The control unit is supplied already connected to the MASTER motor.

The SLAVE motor (if used) should be connected to terminals **K1 - K2 - K3**, following the polarity indicated on the labels attached to the control unit and the Slave motor itself.



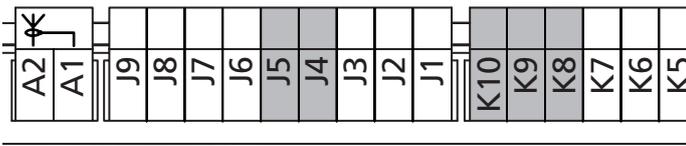
⚠ PHOTOCELLS - INSTRUCTIONS

- The control unit powers the photocells at a nominal voltage of 24 Vdc, with an electronic fuse that breaks the current in the case of an overload.
- If the transmitter power supply is connected to terminals **K8** and **K9**, the control unit can perform the photocell operation test prior to starting gate opening.
- The photocells on the interior side should be installed so as to completely cover the gate opening area.
- If several pairs of photocells are installed on the same side of the gate, the receiver N.C. outputs should be connected in series.
- The photocells are not powered when the control unit is in ENERGY SAVING mode.

4.4 - EXTERNAL PHOTOCELL CONNECTION

Photocells installed on the exterior side of the gate should be connected as follows:

- Connect the transmitter power supply to terminals **K8 (+Test)** and **K9 (-)**
- Connect the receiver power supply to terminals **K10 (+24 VDC)** and **K9 (-)**
- Connect the receiver N.C. output to terminals **J5 (PHOTO)** and **J4 (COM)**

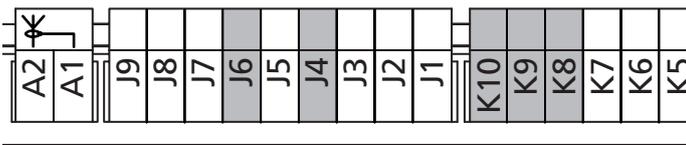


Photocells thus connected are active during closure. In the case of tripping the photocell, the control unit immediately re-opens the gate (without waiting for disengagement).

4.5 - INTERNAL PHOTOCELL CONNECTION

Photocells installed on the interior side of the gate should be connected as follows:

- Connect the transmitter power supply to terminals **K8 (+Test)** and **K9 (-)**
- Connect the receiver power supply to terminals **K10 (+24 VDC)** and **K9 (-)**
- Connect the receiver N.C. output to terminals **J6 (PHOTO)** and **J4 (COM)**



Photocells thus connected are active both during opening and during closing. In the case of the photocell tripping, the control unit immediately stops the gate. When the photocell is disengaged, the gate re-opens fully.

⚠ SAFETY RIBBONS - INSTRUCTIONS

- If several edges, with normally closed contacts, are used, the outputs should be connected in series.
- If several conductive rubber edges are used, the outputs should be connected in cascade, and only the final edge should be terminated on the nominal resistance.
- Active edges connected to the accessory power supply are inactive when the control unit switches to ENERGY SAVING mode.
- To meet the requirements of EN12978, it is necessary to install conductive rubber sensitive edges; contact normally closed sensitive edges should have a control unit that constantly verifies their correct operation. If control units with the option to conduct testing by interrupting the power are used, connect the control unit power cables between terminals

K9 (-) and **K8 (+Test)** on the PD12.

Otherwise, connect them between terminals

K10 (+) and **K9 (-)**.

Testing the edges should be activated by means of the ☐.⓪.ⓔ menu.

4.6 - CONNECTING SAFETY RIBBONS

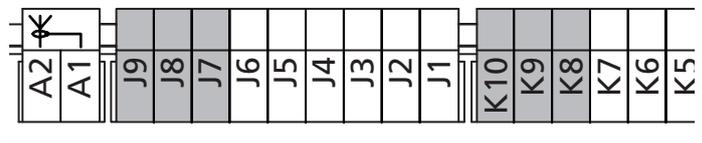
The control unit considers two kinds of safety ribbons, depending on the terminal to which they are connected:

- **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 ribbons operate during the gate opening phase, the control unit will close the doors for 3 seconds, then it stands still; when type 1 safety ribbons 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.
- **Type 2 (mobile):** they are mounted to the door ends. When type 2 safety ribbons operate during the gate opening phase, the control unit will stand still immediately; when type 2 safety ribbons 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.

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.

Connect type 1 safety ribbons cables between terminals **J7 (EDGE1)** and **J9 (COM)** of the control unit.

Connect type 2 safety ribbons cables between terminals **J8 (EDGE2)** and **J9 (COM)** of the control unit.



4.7 - ACTIVATION INPUTS (START and START P.)

PD12 control unit is equipped with two activation inputs, whose operation depends on the programmed operation modes (see Strt item of programming menu):

- **Standard mode**

START = START (a command will cause the complete opening of the gate)

START P. = PEDESTRIAN START (a command will cause the partial opening of the gate)

- **Open/Close command**

START = OPENING (always controls the gate opening)

START P. = CLOSING (always controls the gate closing)

This is an impulse command, that is to say that an impulse will cause the complete gate opening or closing.

- **Manned operation**

START = OPENING (always controls the gate opening)

START P. = CLOSING (always controls the gate closing)

This is a monostable command, that is to say, the gate will be opened or closed as long as the contact is closed and it will immediately stop as the contact is open

- **Timer mode**

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

START = START (a command will cause the complete opening of the gate)

START P. = PEDESTRIAN START (a command will cause the partial opening of the gate)

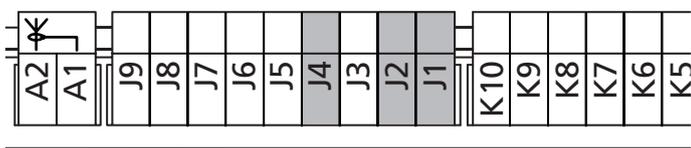
The gate stays open (completely or partially) while the contact is closed on input; as soon as the contact is open the pause time count down will start, after which the gate will be closed again.

ATTENTION: Automatic closing must be enabled

In all modes, inputs must be connected to devices having normally open contacts.

Connect cables of device controlling the first input between terminals **J1 (START)** and **J4 (COM)** of the control unit.

Connect cables of device controlling the second input between terminals **J2 (START P.)** and **J4 (COM)** of the control unit.



The first input function can also be activated by pressing ↑ key outside the programming menu or by means of a remote control stored on channel 1 (see relevant instructions of MR2 receiver).

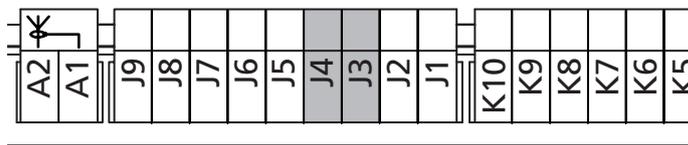
The second input function can also be activated by pressing ↓ key outside the programming menu or by means of a remote control stored on channel 2.

4.8 - STOP

For a better safety, you can fit a stop switch that will cause the immediate gate stop when activated. This switch must have a normally close contact (NC) that will get open in case of operation.

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).

Connect the stop switch cables between terminal **J3 (STOP)** and **J4 (COM)** of the control unit.



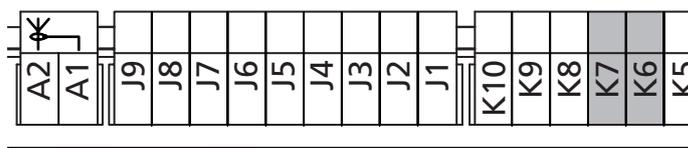
The stop switch function can be activated by means of a remote control stored on channel 3 (see relevant instructions of MR2 receiver).

4.9 - LOW VOLTAGE LIGHT OUTPUT

The PD12 control unit has a 24 VDC output that allows connection of a maximum load of 3 W.

This output can be used to connect a warning light, indicating the status of the gate, or for a low voltage flashing light.

Connect the low voltage signal light or flashing light wires to terminals **K7 (+)** and **K6 (-)**.



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

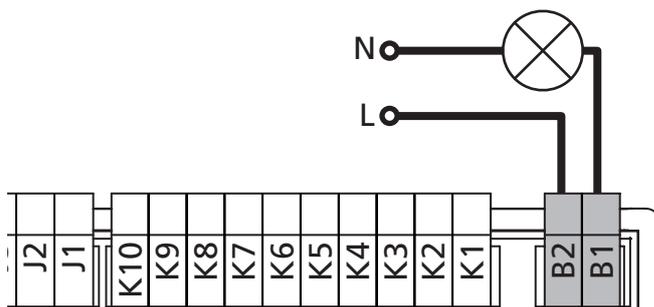
4.10 - COURTESY LIGHTS

Thanks to the output COURTESY LIGHT the control unit allows the connection of an electric appliance (e.g. courtesy light or garden lights), controlled automatically or by means of the special transmitter key.

The courtesy light terminals can be alternatively used for a 230V flashing light with integrated flasher.

The output COURTESY LIGHT is a simple N.O. contact with no power supply.

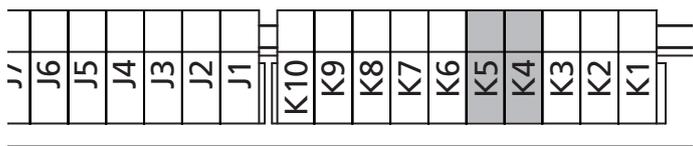
Connect the cables to terminals **B1** and **B2**.



4.11 - 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 **K4** and **K5** of the control unit.

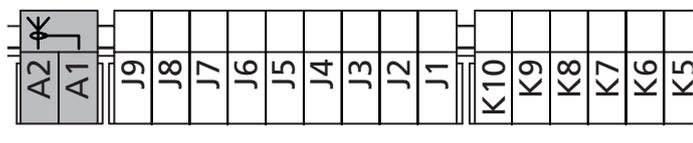


4.12 - EXTERNAL AERIAL

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

Connect the antenna hot pole to terminal **A2 (ANT)** of the control unit and the braiding to terminal **A1 (ANT-)**.

NOTE: using the LUMOS flashing light with built-in antenna, connect the terminal **3** of the flashing light to the terminal **A2 (ANT)** of the control unit and the terminal **4** of the flashing light to the terminal **A1 (ANT-)** of the control unit PD12



4.13 - PLUG IN RECEIVER

PD12 control unit is suitable for plugging in a MR2 receiver having a high-sensitivity super-heterodyne architecture.

⚠ WARNING: it is necessary to turn off the control unit power before doing the operations mentioned here below. Pay attention to the way you connect the removable modules.

MR2 module receiver is provided with 4 channels and each of them is suitable for a command of PD12 control unit:

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

NOTE: Before programming 4 channels and function logics read carefully the instructions of MR2.

4.14 - ADI INTERFACE

The ADI (Additional Devices Interface) interface of the control unit PD12 allows the connection to V2 optional modules.

Refer to V2 catalogue or to the technical sheets to see which optional modules with ADI interface are available for this control unit.

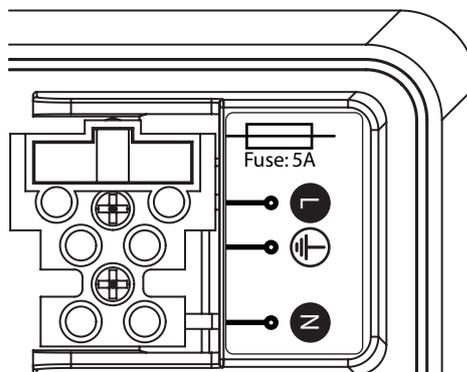
NOTE Please read the instructions of each single module to install the optional modules.

4.15 - POWER SUPPLY

The control unit must be fed by a 230V 50Hz electric line, protected by a differential magnetothermal switch complying with the law provisions in force.

Connect the power supply wires to terminals L and N on the board located next to the transformer.

Connect the earth cable to terminal

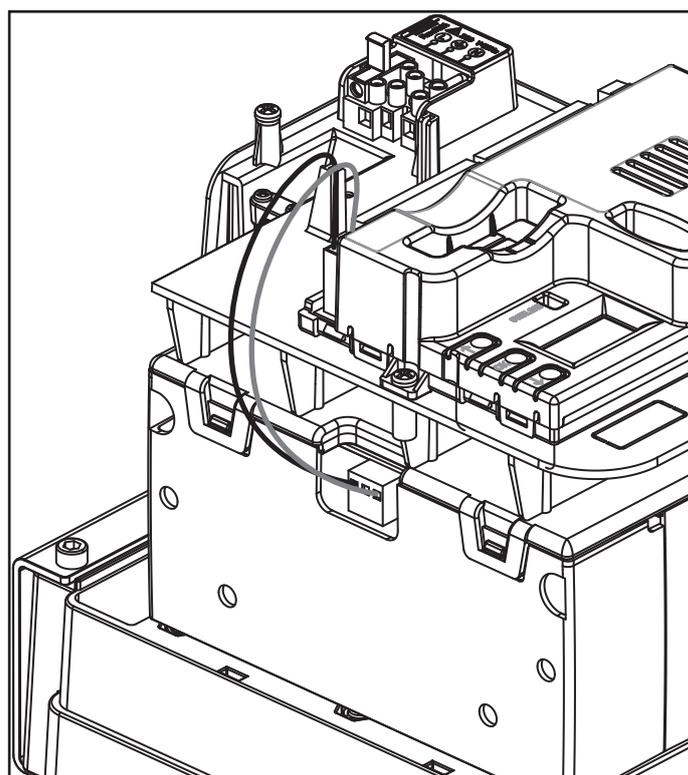
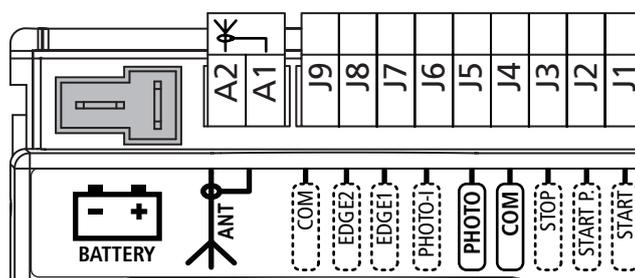


4.16 - BATTERY POWER

In the case of an electricity black-out, the device may be powered using a battery pack (accessory code 161212).

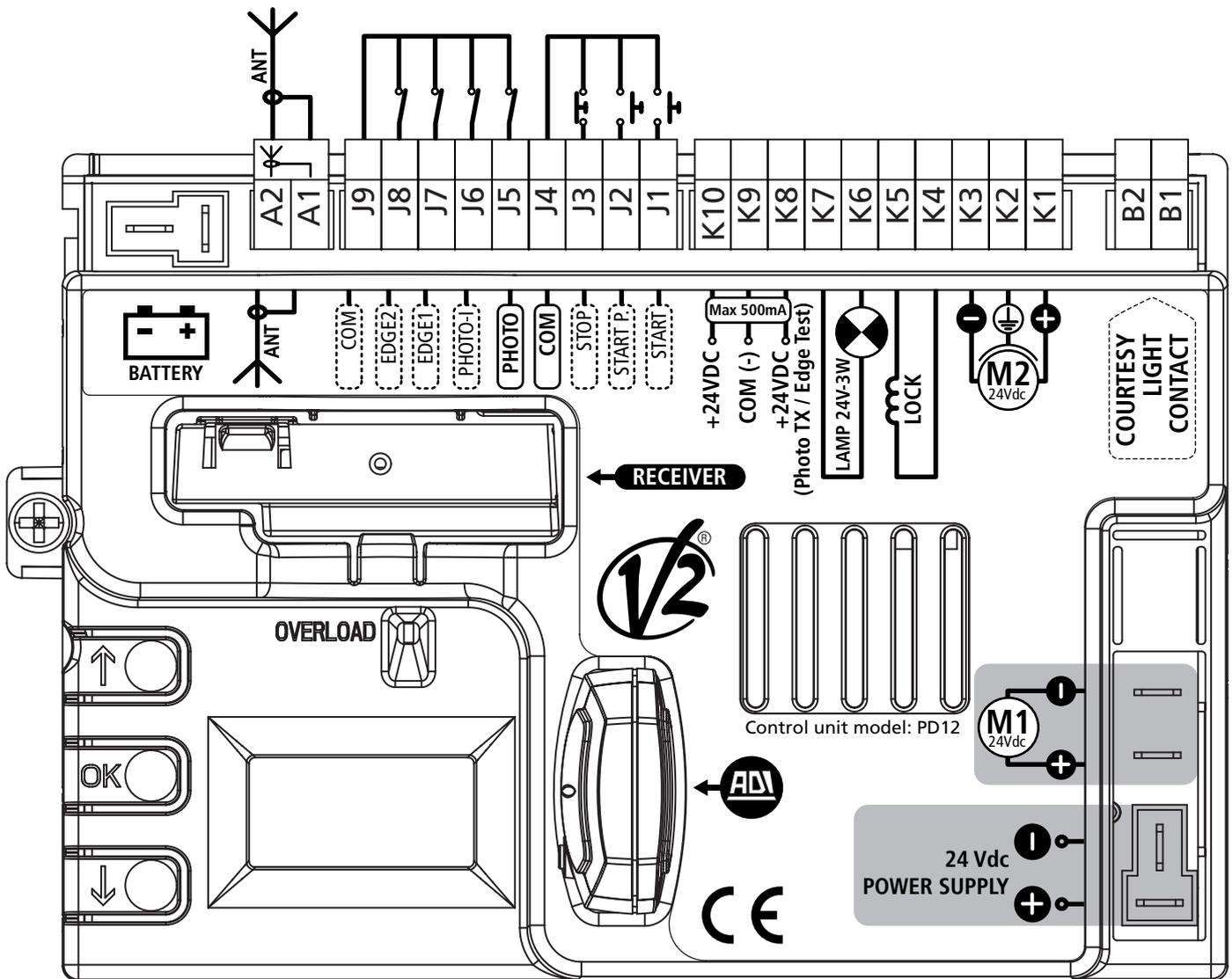
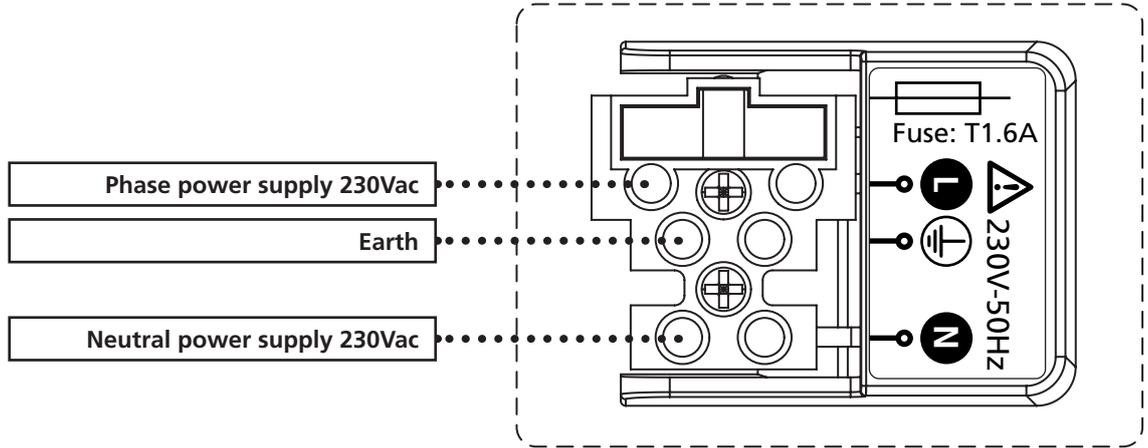
The battery pack should be housed in the specific seating, as shown in the figure.

Connect the battery pack connector to the BATTERY terminals on the control unit.



4.17 - ELECTRICAL CONNECTION SUMMARY

ENGLISH



B1 - B2	230Vac courtesy or flashing lights
K1	Motor 2 (+)
K2	Motor 2 (ground)
K3	Motor 2 (-)
K4 - K5	12V electrolock
K6 - K7	24V courtesy or flashing lights
K8	+24Vdc supply - photocell/optical edge TX for functional Test
K9	Accessory power common (-)
K10	+24Vdc supply for photocells and other accessories
J1	START - Open command for connecting traditional devices with N.O. contact
J2	START P. - Pedestrian open command for connecting traditional devices with N.O. contact
J3	STOP command. N.C. contact
J4	Common (-)
J5	Exterior photocell. N.C. contact
J6	Interior photocell. N.C. contact
J7	Type 1 edges (fixed). N.C. contact
J8	Type 2 edges (mobile). N.C. contact
J9	Accessories common (-)
A1	Antenna shield
A2	Antenna
BATTERY	Battery pack (code 161212)
RECEIVER	Connector for MR2 receiver
ADI	Module interface
M1	Motor 1
24Vdc Power Supply	Control unit power supply (+24 VDC)
OVERLOAD	Signals an overload on the accessory power supply

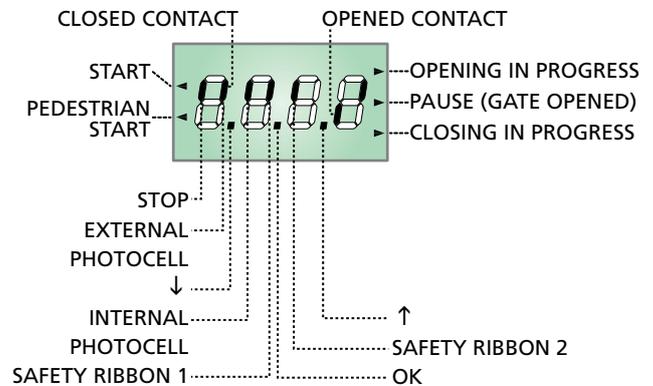
PLEASE NOTE: the highlighted connections are factory pre-wired

5 - CONTROL PANEL

5.1 - DISPLAY

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.** Firmware version, e.g. **Pr 1.5**, will be viewed in the following 1.5 sec.

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 PHOTO, PHOTO-I, EDGE and STOP have all been correctly connected).

PLEASE NOTE: if the panel is off, the control unit should be in ENERGY SAVING mode; press the OK key to turn it on.

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.

The arrows on the left of the display show the state of the start inputs. The arrows light when the related input is closed.

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).

5.2 - USE OF THE KEYS FOR PROGRAMMING

The control unit functions and times are programmed by means of a special configuration menu, which can be accessed and explored by using the 3 keys, ↑, ↓ and OK, located on the side of the control unit display.

PLEASE NOTE: Outside the configuration menu, pressing the ↑ key activates the START command, pressing the ↓ key activates the PEDESTRIAN START command.

In the manual, the control unit programming procedure is represented by block diagrams, consisting of the various display views.

The various blocks include symbols showing the user the keys to be pressed to navigate around the menu.

When a time is written to the side of the symbol, this means the key should be pressed and held for the length of time indicated.

The following table describes the functions of the push-buttons:

	Press and release the push-button OK
	Keep pressed the push-button OK for 2 seconds
	Release the push-button OK
	Press and release the push-button ↑
	Press and release the push-button ↓

6 - INITIALISING THE CONTROL UNIT

This operation is necessary when the control unit is installed for the first time, and is used to define the gate leaf starting order and the direction of rotation of the two motors. Until initialisation is performed, it is not possible to operate the gate or program the control unit.

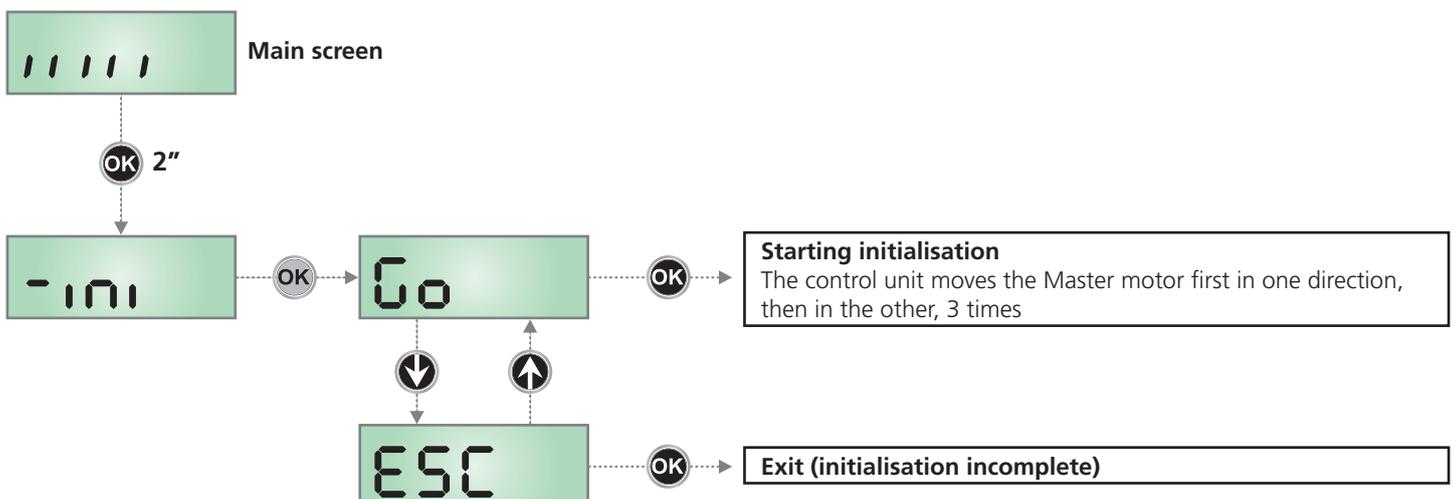
The initialisation procedure steps are as follows:

1. Starting initialisation
2. Selecting the superior and inferior gate leaves
3. Selecting the opening direction
4. Verifying Slave motor connection
5. Self-training the working times

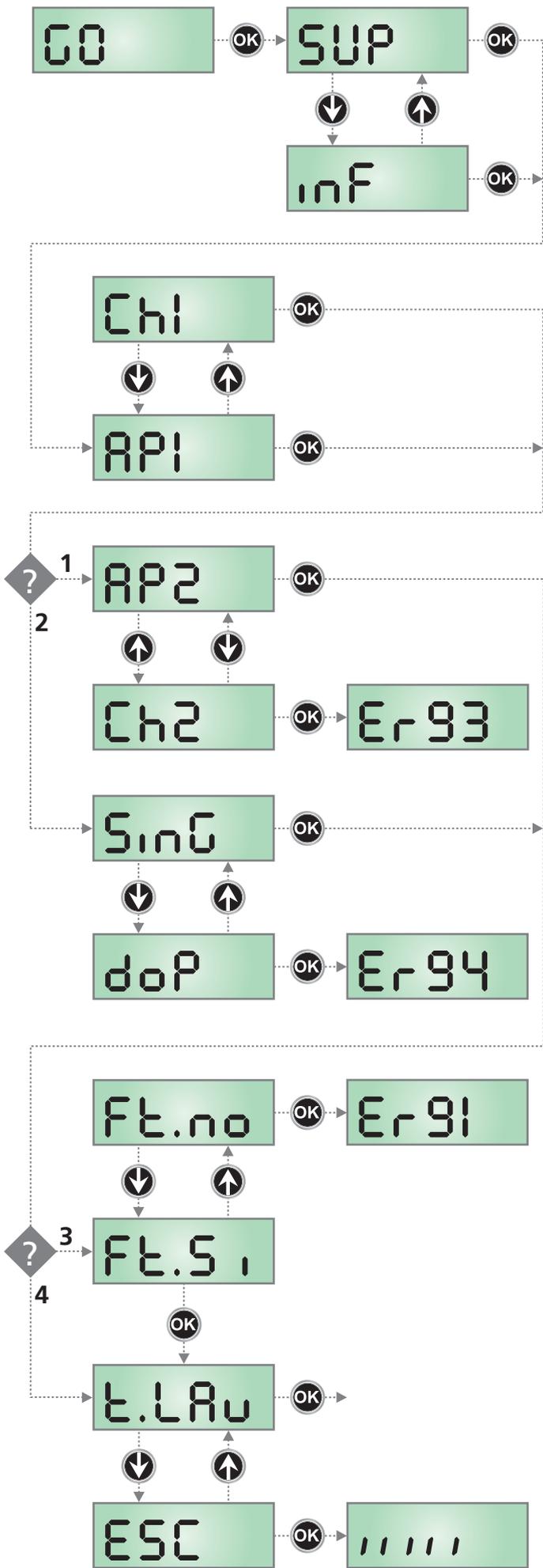
WARNING:

- Ensure that the motors and accessories are connected correctly prior to performing initialisation
- Position the gate leaves roughly at the half way points (unblock the motors, operate the gate leaves, re-block the motors)
- Firstly, the procedure will involve short movements of the gate leaves. In the final phase, the gate is moved through its entire path. The operator should be positioned so as not to interfere with the movement of the gate leaves and so as not to trip any photocells
- Installation is automatically interrupted if no operations are performed for one minute
- The initialisation procedure involves the loading of default values for all programming menu parameters

Start



Press and hold OK for approx. 2 seconds, until the message “- 101” appears. On release of the key, the message GO appears. Pressing OK starts the procedure. The arrow keys can be used to select “ESC”, thus exiting without starting the procedure.



Select this parameter depending on the position (superior or inferior) of the gate leaf in motion
SUP the gate leaf in motion is the leaf that should open first
inf the gate leaf in motion is the leaf that should open second

PLEASE NOTE: if installation envisages one motor only, select SUP

Select this parameter depending on the direction of opening of gate leaf 1
AP1 the gate leaf is opening
Ch1 the gate leaf is closing

Having selected this parameter, the control unit moves the SLAVE motor

1 If the control unit detects the SLAVE motor, the display shows **AP2**

Select this parameter depending on the direction of opening of gate leaf 2
AP2 the gate leaf is opening
Ch2 the gate leaf is closing

Having selected the parameter, press **OK** to move to the next phase.

If the display shows **Er93**, this means the SLAVE motor is connected incorrectly.
Check the SLAVE motor connection and repeat the initialisation procedure

2 If the control unit does NOT detect the SLAVE motor, the display shows **SinG**

If the installation envisages only one motor, press **OK** to move to the next phase.

If the installation envisages two motors, select the **doP** menu option and press **OK**.

The display will show **Er94** to indicate that the SLAVE motor is not connected, or is connected incorrectly.
Check the SLAVE motor connection and repeat the initialisation procedure

3 If the control unit does not detect a photocell on the PHOTO input, the display shows **FL.no**

If the installation does not envisage the use of a photocell, select **FL.no** and press **OK** to move to the next phase. The photocell will be automatically disabled.

If installation envisages the use of a photocell, select **FL.S1** and press **OK**. The display will show **Er91** to indicate that the photocell is not connected, or is connected incorrectly. Check the photocell connection and repeat the procedure.

4 If the control unit detects a photocell connected correctly to the PHOTO input, it automatically switches to the working time self-training phase.

Press **OK** to start the self-training phase. Select **ESC** and press **OK** to exit the menu without performing the time self-training phase.

Please note: in the case of exiting without self-training, it will not be possible to operate the gate.

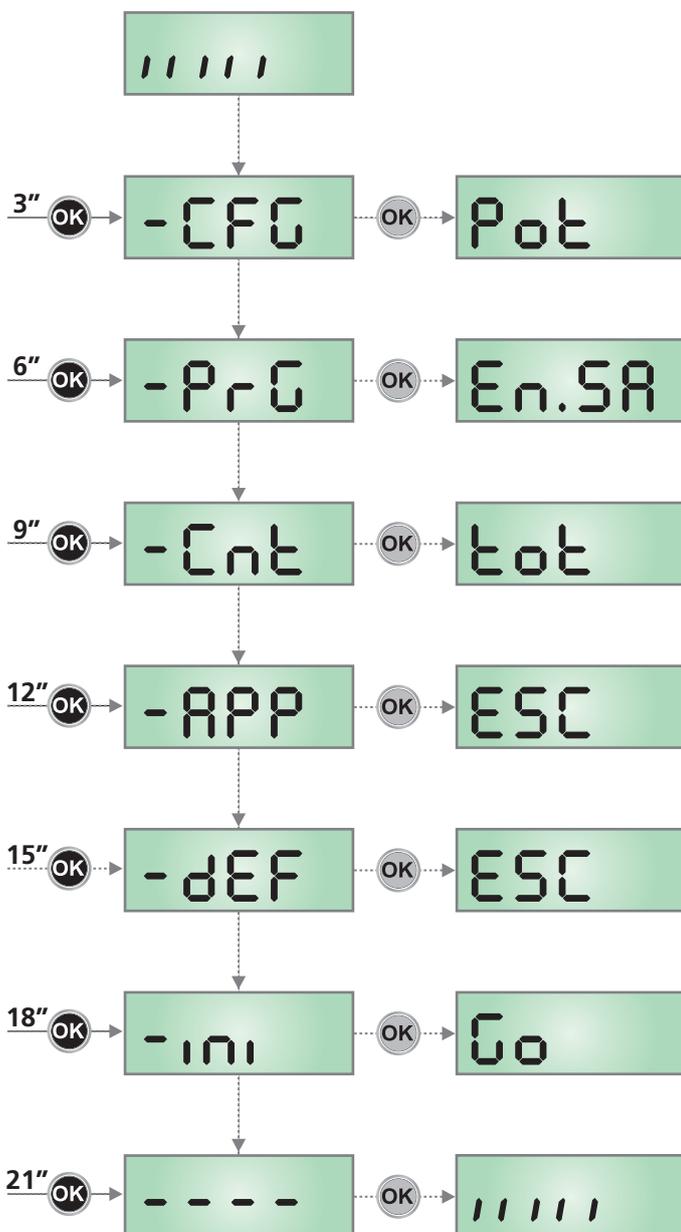
In any case, it will be possible to perform self-training in a separate phase and program the remainder of the control unit functions, using the specific menu.

7 - ACCESSING THE CONTROL UNIT SETTINGS

Once initialisation is performed (even without time self-training), it will be possible to access the various control unit functions, including initialisation itself.

1. Press and hold the **OK** key until the display shows the menu desired
2. Release the **OK** key: the display will show the first item in the sub-menu

-CFG	Rapid configuration
-PrG	Programming the control unit (full menu)
-Cnt	Cycle counter
-APP	Self-training the working times
-dEF	Loading the default parameters
-ini	Control unit initialisation



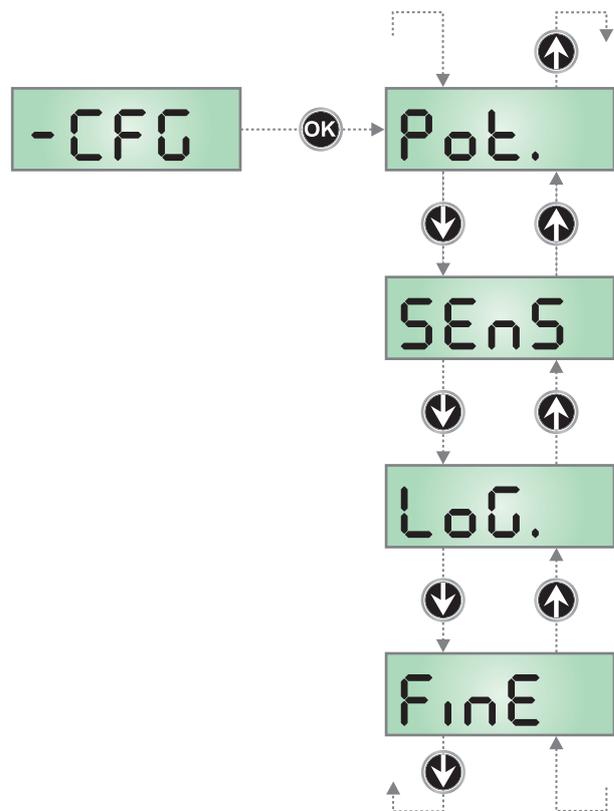
8 - RAPID CONFIGURATION

Rapid configuration is a menu allowing the main control unit parameters to be programmed with a few operations.

It is essential the initialisation procedure has already been performed (even without time self-training) in order to perform rapid configuration.

1. Press and hold the **OK** key until the display shows the **-CFG** menu
2. Release the **OK** key: the display will show the first item in the Pot menu.

Pot.	Power adjustment
SEnS	Obstacle sensor adjustment
LoG.	Operation logic
FinE	Exit the menu

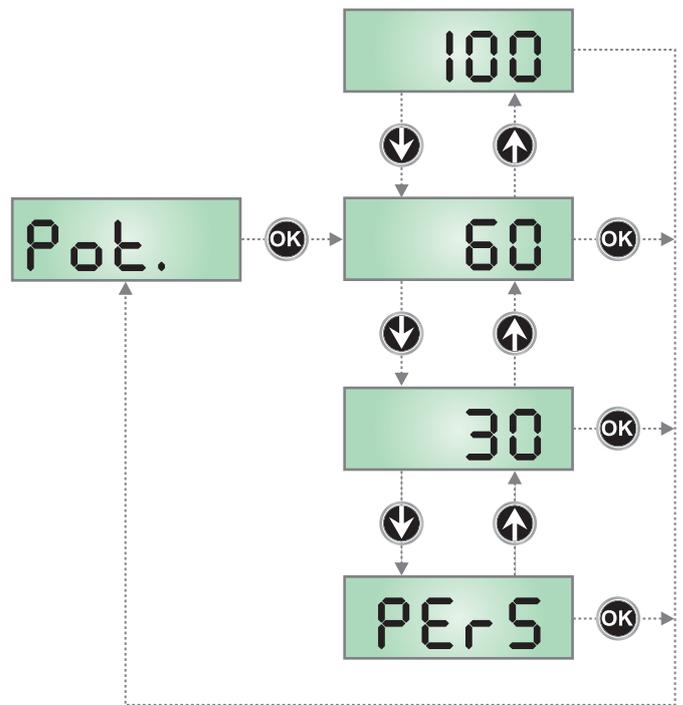


8.1 - POWER ADJUSTMENT

This rapid configuration menu option allows the motor power to be adjusted. The value displayed is the value currently set. Using the \uparrow and \downarrow keys, select the value to be set and press **OK** to confirm and continue.

30 ÷ 100 Values from 30 (minimum) to 100 (maximum).
Equal values for both motors

PER5 Customised configuration: if the display shows **PER5**, this means the two motors have different power values set using the **Pot1** and **Pot2** options in the control unit programming menu. Selecting the **PER5** options exits the menu, maintaining the previously set values.



8.2 - OBSTACLE SENSOR ADJUSTMENT

The PD12 control unit has a sophisticated system allowing detection of whether gate movement is impeded by an obstacle. This system is based on measurement of the current absorbed by the motor: an unexpected increase in current absorption indicates the presence of an obstacle. the obstacle sensor is also used to recognise the arrest points.

Detection of an obstacle during normal movement of the gate results in brief inversion of motion in order to free the obstacle. The gate is stopped when one of the following conditions is present:

- During slowing
- During the first work cycle after accessing the programming menu
- After having powered-up the control unit

This menu option is used to adjust the motor current value that trips the obstacle sensor.

The value displayed is the value currently set. Using the \uparrow and \downarrow keys, select the value to be set and press **OK** to confirm and continue.

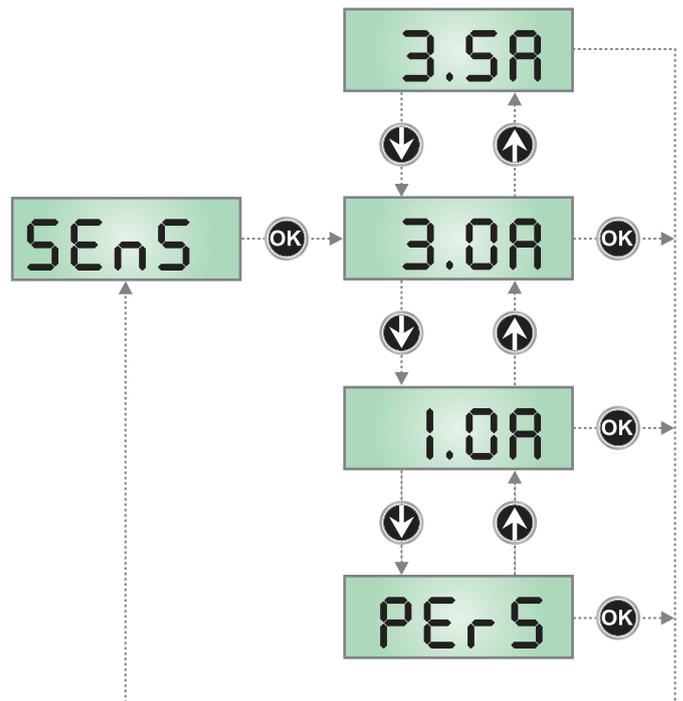
The possible options are:

1.0 ÷ 3.5 Values from 1.0 to 3.5 Amperes: values common to both motors. The minimum value corresponds to maximum obstacle sensor sensitivity, and vice-versa. Based on the value selected, the control unit also calculates the acceleration and deceleration rate and the start thrust function.

PER5 Customised configuration: if the display shows **PER5**, this means the two motors have different values set using the **SEn1** and **SEn2** options in the control unit programming menu. Selecting the **PER5** options exits the menu, maintaining the previously set values.

Please note: if time self-training has been performed during initialisation, the control unit has also performed automatic strain recognition and has automatically set the sensitivity value.

If, on the other hand, self-training has not been performed, the pre-set value is the default.



8.3 - OPERATIONAL LOGIC

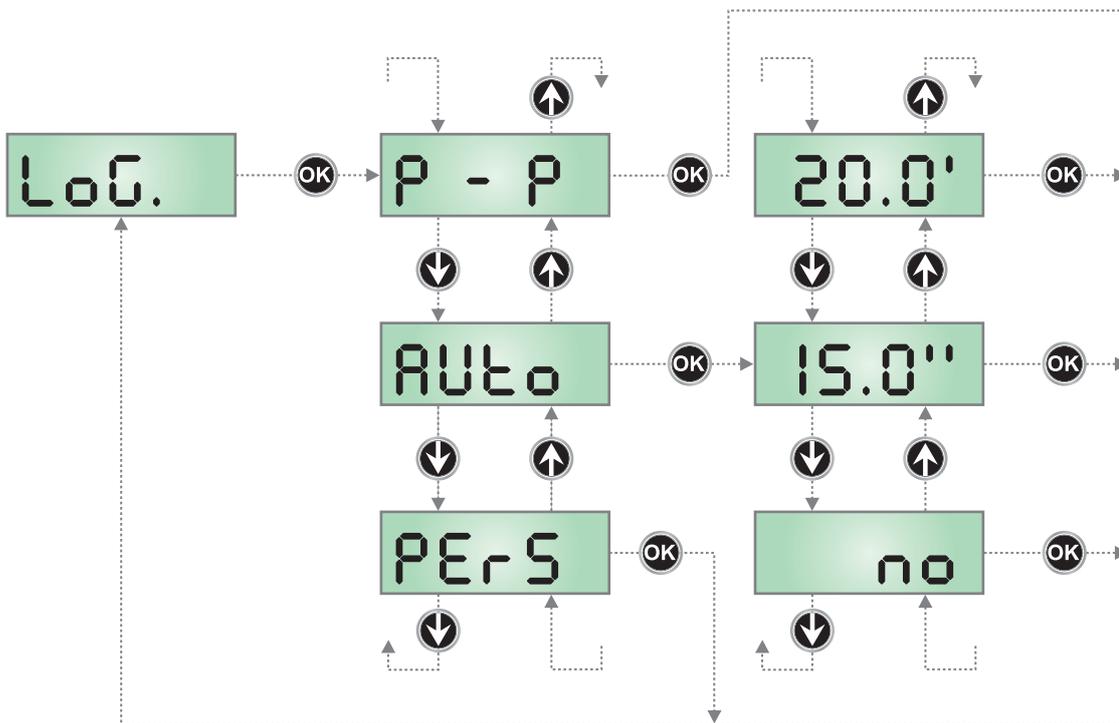
This rapid configuration option is used to define the start command action (from the terminal board, from the remote control or from the keypad)

The possible options are:

- P - P Step Logic** - the Start command results in opening, stop, closure, stop, in sequence.
- Auto Automatic logic** - the Start command is used to open the gate.
 - During opening, other Start commands are ignored. Closure is automatic after a programmable pause time
 - During the pause, a Start command restarts the pause time count from the beginning.
 - During closure, a Start command immediately reopens the gate.

PLEASE NOTE: If automatic logic is selected, the pause time adjustment option is accessed (up to 20 minutes, the default value is 15 seconds).

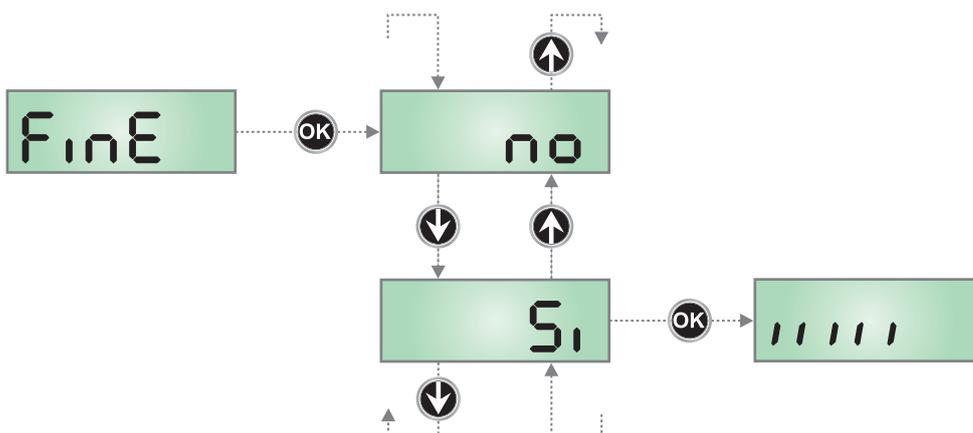
PErS Customised logic: the Start command acts in accordance with the programming of the various Programming Menu parameters. Selecting the **PErS** options exits the menu, maintaining the previously set values.



8.4 - EXITING RAPID CONFIGURATION

This menu closes programming (both predefined and customised), saving the modified data in the memory

PLEASE NOTE: if the menu is exited due to time out (after 1 minute without pressing any keys) the data set is not stored.



9 - LOADING THE DEFAULT PARAMETERS

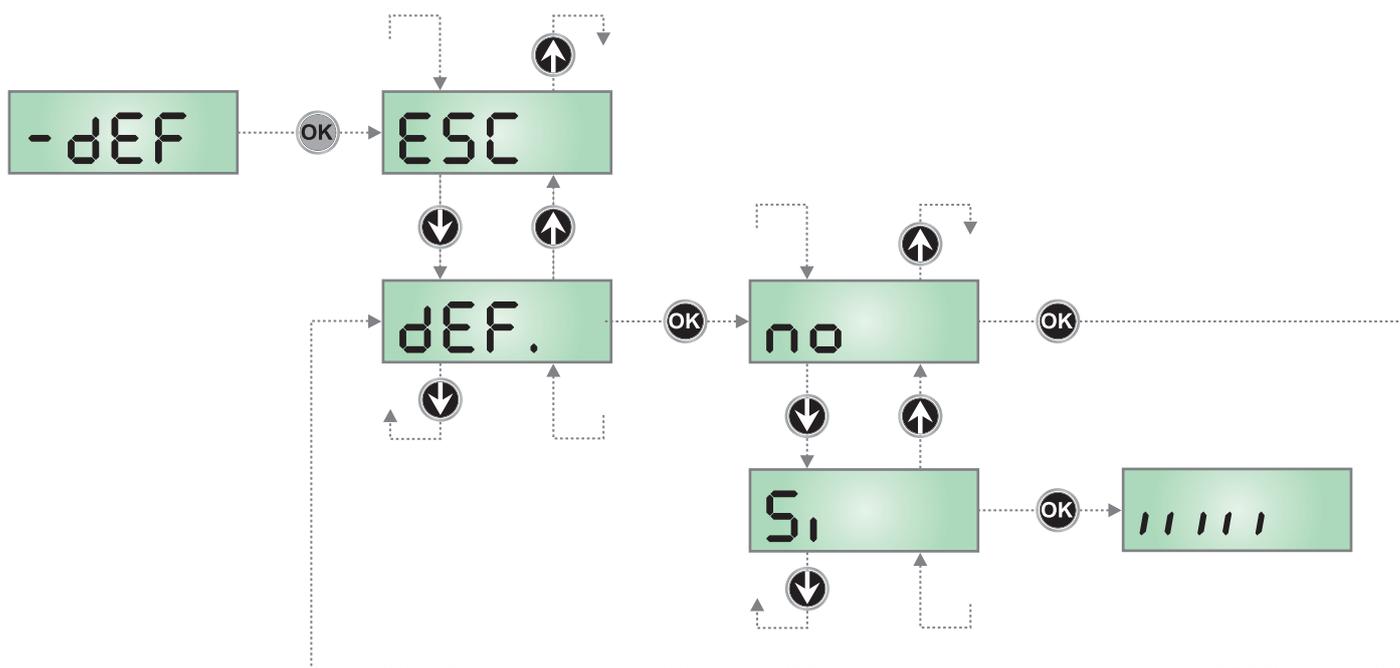
If necessary, it is possible to restore all parameters to their standard or default values (see the final summary table).

⚠ PLEASE NOTE: This procedure results in the loss of all customised parameters, and hence it has been included outside the configuration menu, in order to minimise the likelihood of it being run in error.

Loading of the default parameters is performed each time the initialisation procedure is performed (even without working time self-training).

The parameters acquired during initialisation are maintained, even when the default parameters are loaded.

1. Press and hold the **OK** key until the display shows **-dEF**
2. Release the **OK** key: the display shows **ESC** (only press the **OK** key if it is desired to exit this menu)
3. Press the **↓** key: the display shows **dEF.**
4. Press the **OK** key: the display shows **no**
5. Press the **↓** key: the display shows **S₁**
6. Press the **OK** key: all parameters are overwritten with their default values, the control unit exits programming mode and the display shows the control panel.



10 - WORKING TIME SELF-TRAINING

This menu allows automatic learning of the times required for the gate to open and close. During this phase, the control unit also records the forces required to open and close the gate: these values will be used by activating the obstacle sensor.

1. Press and hold the **OK** key until the display shows **-APP**
2. Release the **OK** key: the display shows **ESC** (only press the **OK** key if it is desired to exit this menu)
3. Press the **↓** key: the display shows **t.LAu**
4. Press the **OK** key to activate the working time self-training cycle: the display shows the control panel and starts the time self-training procedure.

PLEASE NOTE:

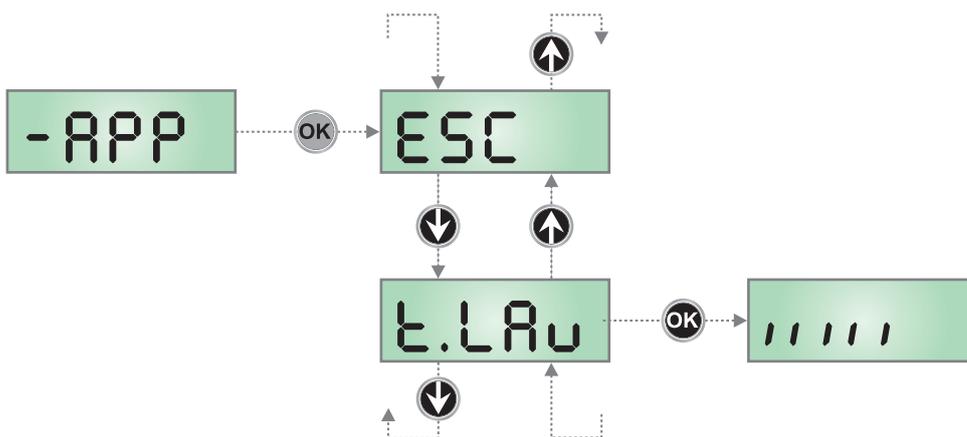
- If self-training is performed during the initialisation procedure, the sensitivity value acquired for the obstacle sensor is automatically saved in the memory, hence the procedure terminates at step 4.5
- If there is only one motor present, the procedure starts at step 4.3

- 4.1 Gate leaf 1 is opened for a few seconds
- 4.2 Gate leaf 2 is closed until one of the following conditions occurs:
 - the obstacle sensor detects the gate leaf is blocked
 - a START command is given
- 4.3 Gate leaf 1 is closed until one of the following conditions indicated in part 4.2 occurs. This position is stored as the closing point for gate leaf 1.

- 4.4 An opening manoeuvre is performed for each gate leaf, the operation terminates when one of the conditions described in part 4.2 occurs (the first START stops gate leaf 1, the second START stops gate leaf 2). The time required is stored as the opening time.
 - 4.5 A closing manoeuvre is performed for each gate leaf; the operation terminates when one of the conditions indicated in part 4.2 occurs. The time required is stored as the closing time.
5. The display shows the value recommended for the obstacle sensor for motor 1. If no operations are performed for 20 seconds, the control unit exits the programming phase, without saving the value recommended.
 6. The recommended value may be modified by pressing the **↑** and **↓** keys, and pressing the **OK** key confirms the displayed value and the display shows **SEn1**
 7. Press the **↓** key: the display shows **SEn2**; press the **OK** key to display the value recommended for the obstacle sensor for motor 2, which can be modified in a manner similar to that for **SEn1**
 8. Press and hold the **↓** key until the display shows **FinE**, then press the **OK** key, select the option **S1** and then press the **OK** key to exit programming mode, storing the value for the sensors.



PLEASE NOTE: If the control unit is left to time out from programming mode (1 minute), the obstacle sensors return to the value that was set prior to performing self-training. On the other hand, the opening/closing times are always stored.



11 - READING OF CYCLE COUNTER

PD12 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 two counters available:

- A totalizing counter for completed opening cycles that cannot be zeroed (option **tot** of item **Cont**)
- A downward counter for the number of cycles before the next request for service (option **SEru** of item **Cont**). This counter can be programmed according to the desired value.

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 \uparrow and \downarrow 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; if you press once \uparrow or \downarrow key, the current counter value will be rounded up or down to thousands, any following pressure will have the setup be increased or decreased of 1000 units. The previous displayed count will get lost.

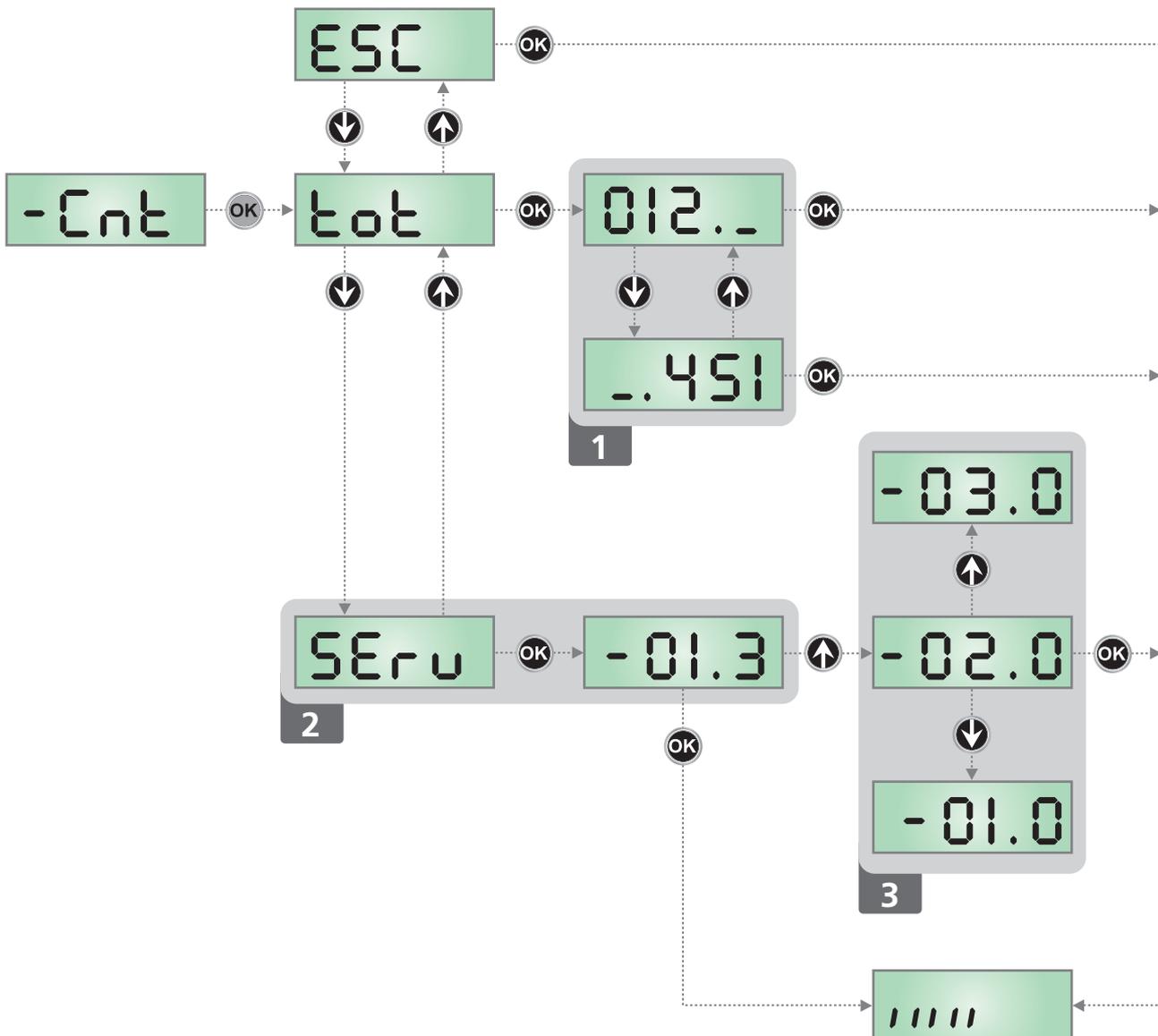
11.1 - SIGNAL OF SERVICE REQUIRED

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.



12 - PROGRAMMING THE CONTROL UNIT

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

By pressing **↓**, you will pass to the next item; by pressing **↑**, you will return to the previous item.

By pressing **OK**, you can view the current value of selected item and possibly change it.

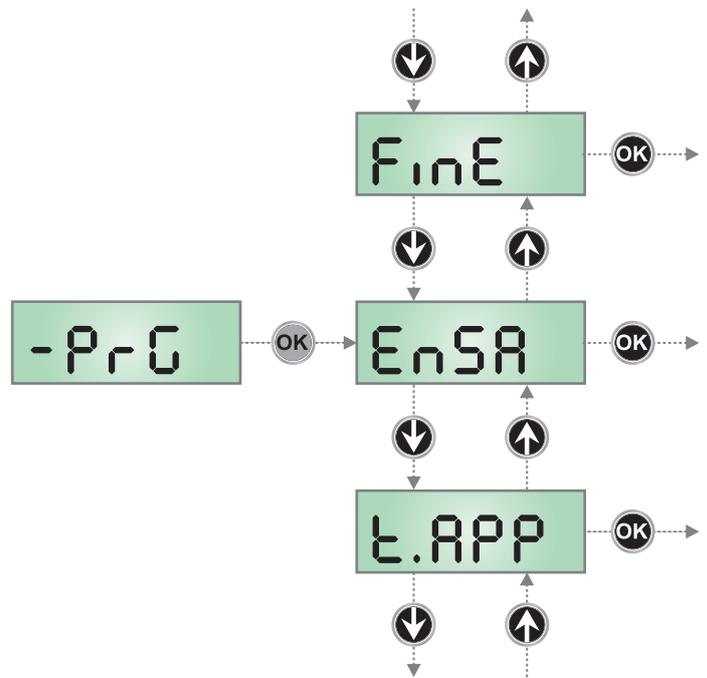
The last menu item (**End**) allows storing the carried out changes and going back to the control unit normal operation.

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.

By holding down the **↓** or **↑** keys, configuration menu items will scroll fast, until item **End** is viewed.

In this way, you can quickly reach either the top or bottom of the list.



PARAMETER	VALUE	DESCRIPTION	DEFAULT	MEMO
EnSA		Enabling Energy Saving	no	
	no	Function not enabled		
	Si	Function enabled		
t.APP		Partial opening time (pedestrian access)	8.0"	
	0.0" - 1'00	If a Pedestrian Start command is received, the control unit opens the SUPERIOR gate leaf only, for as reduced time (adjustable time from 0.0" to 1'00)		
t.ChP		Partial closing time (pedestrian access)	9.0"	
	0.0" - 1'00	In the case of partial opening, the control unit uses this time for closing. The maximum time that can be set is equal to the closing time for the SUPERIOR gate leaf (adjustable time from 0.0" to 1'00). NOTE: The avoid the gate leaf not closing completely, it is recommended a longer time be set than that used for opening t.APP		
r.AP		Gate leaf delay during opening	1.0"	
	0.0" - 1'00	During opening, the INFERIOR gate leaf starts to move after the SUPERIOR gate leaf, with a delay equal to the length of time set by this menu (adjustable time from 0.0" to 1'00). NOTE: If r.AP is set to 0, the control unit does not check the correct closing order of the gate leaves		
r.Ch		Gate leaf delay during closing	5.0"	
	0.0" - 1'00	During closing, the SUPERIOR gate leaf starts to move after the INFERIOR gate leaf, with a delay equal to the length of time set by this menu (adjustable time from 0.0" to 1'00)		
t.SEr		Lock time	2.0"	
	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 (adjustable time from 0.0" to 1'00)		
	no	Function deactivated		
SEr.S		Silent Locking Mode	Si	
	Si	Silent Mode (100 Hz) WARNING: In some cases, there may be problems when unlocking. If problems should occur, select the Standard mode		
	no	Standard Mode (50 Hz)		

PARAMETER	VALUE	DESCRIPTION	DEFAULT	MEMO
Ł.RSE		Lock advance time	0.0	
	0.5" - 1'00	While the electric lock is energized, the gate will stay standstill for Ł.RSE time (adjustable time from 0.5" to 1'00), to make its release easier. WARNING: in case the gate has no electric lock, set the value 0		
Ł.INU		Backlash time It could be useful to give a closing command to motors, to help the electric lock release	no	
	no	Function deactivated		
	0.5" - 1'00	The control unit controls the motors in reduced power in closing direction for the setup time (adjustable time from 0.5" to 1'00). NOTE: the backlash precedes the electric lock release. It is possible to reverse the order by setting a lock advance time higher than the backlash one. WARNING: in case the gate has no electric lock, set the value 0.		
Ł.PRE		Pre-blinking time	no	
	0.5" - 1'00	Before any gate movement, blinker will be activated for Ł.PRE time, to warn about the incoming motion (adjustable time from 0.5" to 1'00)		
	no	Function deactivated		
Pot1		Motor 1 power	100	
	30 - 100	The displayed value is the percentage of max. motor power		
Pot2		Motor 2 power	100	
	30 - 100	The displayed value is the percentage of max. motor power		
Po.r1		Power Motor 1 during slow-down phase	30	
	0 - 60	The displayed value is the percentage of max. motor power		
Po.r2		Power Motor 2 during slow-down phase	30	
	0 - 60	The displayed value is the percentage of max. motor power		
P.bRE		Maximum motor power during battery operation During battery operation, the system is powered with a lower voltage than with mains voltage, as a result the power of the motors is reduced compared to normal operation and may not be enough to move the doors effectively. This menu allows you to increase the power supplied to the motors in order to compensate for the loss due to battery operation.	Auto	
	Auto	Recommended setting for 230V power supply systems and with B-PACK buffer battery (code 161212). When the system recognises a lack of mains power supply, it automatically provides the increase in power.		
	Eco	Setting recommended for solar panel powered systems and ECO-LOGIC kits. The system always provides an increase in power to compensate for the reduction in voltage compared to the mains value.		
	no	Function deactivated		

PARAMETER	VALUE	DESCRIPTION	DEFAULT	MEMO
rRM		Starting ramp	i	
	0 - 4	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.		
SEn1		Adjusting the obstacle sensor on motor 1	1.5A	
	1.0A - 3.5A	This menu allows adjustment of the sensitivity of the obstacle sensor for motor 1. When the current absorbed by the motor exceeds the value set, the control unit detects an alarm. For sensor operation, please refer to the chapter 8.2		
SEn2		Adjusting the obstacle sensor on motor 2	1.5A	
	1.0A - 3.5A	This menu allows adjustment of the sensitivity of the obstacle sensor for motor 2. When the current absorbed by the motor exceeds the value set, the control unit detects an alarm. For sensor operation, please refer to the chapter 8.2		
rALL		Braking	30	
	30 - 100	In the final section of the trip, the control unit drives the motor at reduced power, depending on the values set for parameters Po.r1 and Po.r2. In this menu, it is possible to adjust the duration of the braking phase. The value set is the percentage of the total trip, and is equal for both motors during opening and closing.		
SE.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	The gate stops and goes to pause		
	ChU	The gate immediately starts closing		
	no	The gate go on with the opening phase (command is ignored)		
SE.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	The gate stops and its cycle is considered as finished		
	APEr	The gate opens again		
SE.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	ChU	
	ChU	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	PAUS	
	PAUS	The gate stops and goes to pause		
	ChU	The gate immediately starts closing		
	no	The gate goes on with the opening phase (command is ignored)		

PARAMETER	VALUE	DESCRIPTION	DEFAULT	MEMO
Ch.RU		Automatic closing In automatic mode, the control unit automatically recloses the gate on expiry of the time limit set in this menu	no	
	no	Function deactivated		
	0.5"-20.0'	The gate recloses after the set period time (adjustable time from 0.5" to 20.0')		
Ch.tr		Closing after transit During the automatic operation, the pause count down starts from the set up value each time a photocell operates during the pause. If the photocell operates during the opening time, this time will be immediately stored as pause time. This function allows having a fast closing as soon as transit through the gate is completed, therefore, a time shorter than Ch.RU is generally used. Ch.RU will be used when no is set up.	no	
	no	Function deactivated		
	0.5"-20.0'	The gate recloses after the set period time (adjustable time from 0.5" to 20.0')		
PR.tr		Pause after transit	no	
	no - Si	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		
LUCi		Courtesy lights This menu allows setting the automatic operating of the courtesy lights during the opening cycle of the gate. NOTE: If the output is used to drive a flashing light (with internal flasher) select FLSh	FLSh	
	FLSh	Light on for the entire duration of the cycle		
	no	Function deactivated		
	t.LUC	Timed function (from 0 to 20')		
AUS		Auxiliary channel This menu allows setting the operating of the relay of the lighting of the courtesy lights by means of a remote control stored on the channel 4 of the receiver	Mon	
	Mon	Monostable operation		
	t.M	Timed function (from 0 to 20')		
	b.St	Bistable operation		
SP.R		Setting low voltage exit lights This menu makes to possible to set the flashing exit function.	FLSh	
	FLSh	Flasher operation (fixed frequency)		
	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)		
	no	Function deactivated		
LP.PR		Blinker during pause time	no	
	no	Function deactivated		
	Si	The blinker will be on during the pause time too (gate open with automatic closure active).		

PARAMETER	VALUE	DESCRIPTION	DEFAULT	MEMO
St.r.t		Activation inputs (START and START P) PD12 control unit is equipped with two activation inputs, whose operation depends on the programmed operation modes (see chapter 4.7):	StAn	
	StAn	Standard mode		
	no	Start inputs from terminal board are disabled. Radio inputs operate in standard mode		
	RP.Ch	Open/Close command		
	PrES	Manned operation		
	oroL	Timer mode		
StoP		Stop Input	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		
Foto		Exterior photocell input This menu makes it possible to enable the exterior photocell input, i.e. inactive during opening (see the section regarding installation).	CFCh	
	CFCh	Input enabled even at standstill gate too: the opening movement does not start if photocell is interrupted		
	no	Input disabled (ignored by the control unit)		
	Ch	Input enabled for the closing phase only. Warning: if you select this option, you must disable photocell test		
Fote.i		Interior photocell input This menu makes it possible to enable the interior photocell input, i.e. active during opening and closing (see the section regarding installation).	no	
	no	Input disabled (ignored by the control unit)		
	RP.Ch	Input enabled		
F.t.tE		Test of the photocells	Si	
	no - Si	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 on for 5 sec. The whole test cycle lasts less than one second.		
CoS1		Safety ribbon 1 input This menu allows enabling the input for type 1 safety ribbon (fixed ribbons)	no	
	no	Input disabled (ignored by the control unit)		
	RP	Input enabled during the opening and disabled during the closure		
	RPCh	Input enabled in opening and closure		
CoS2		Safety ribbon 2 input This menu allows enabling the input for type 2 safety ribbon, that is to say mobile ribbons	no	
	no	Input disabled (ignored by the control unit)		
	Ch	Input enabled during closure and disabled during opening		
	RPCh	Input enabled in opening and closure		

PARAMETER	VALUE	DESCRIPTION	DEFAULT	MEMO
Co.tE		Test of the safety edges This menu allows setting the method of control of the safety edges working	no	
	no	Test disabled		
	rESi	Test enabled for conductive rubber safety edges		
	Foto	Test enabled for optical safety edges		
rLR		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	2	
	0	Function disabled		
	1 - 10	Time motor release (max. 1 second)		
FinE		End of Programming This menu allows to finish the programming (both default and personalized) saving the modified data into memory	no	
	no	Do not quit the programming		
	Si	Exit from the programming menu, storing the parameters set		

13 - OPERATION DEFECTS

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

OVERLOAD led is on

It means that there is an overload on accessory power supply.

1. Remove the extractable part containing terminals K1 to K10. 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.

Error 1

The writing **Err1** appears on display when you exit from programming:

It means that changed data could not be stored. This kind of defect has no remedy and the control unit must be sent to V2 S.p.A. for repair.

Error 2

When a Start command is given and the gate does not open and the display shows **Err2**

It means that mosfet test failed. This kind of defect has no remedy and the control unit must be sent to V2 S.p.A. for repair.

Error 3

When a Start command is given and the gate does not open and the display shows **Err3**

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 external photocells, be sure that Foto menu item is on **CF.Ch.**
4. Be sure that photocells are powered and working; when you interrupt their beam, you should hear the relay tripping.
5. Ensure the photocells are connected correctly, as shown in the dedicated section on page 49

Error 5

Once given a start control, the gate does not open and the display shows **Err5**

It means that the test of the safety edges failed. Check that the menu of the test of safety edges (**Co.tE**) have been set correctly. Check that the safety edges enabled from the menu are installed.

Error 8

When executing a self-learning function the control is refused and the display shows **Err8**

It means that the setting of the control unit is not compatible with the requested function. In order to execute the self-learning it is necessary that the Start inputs are enabled in standard mode; to survey the currents of the motor it is also necessary that the length of the opening and closure are at least of 7,5 seconds.

Error 9

When you are trying to change the control unit setups and the the display shows **Err9**

It means that programming was locked by means of the programming lock key CL1+ (code 161213). 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

Error 90

When there is an attempt to start an operational cycle without having yet performed the initialisation procedure, the message **Er90** appears.

Perform the initialisation procedure.

Error 91

If, during the initialisation procedure, the control unit fails the exterior photocell test, the display shows the message **Er91**

Check the photocell connected to the PHOTO input is working.

PLEASE NOTE: This abnormality does not delete data acquired using the initialisation procedure

Error 92

If, during the initialisation procedure, the control unit detects an obstacle during movement of the gates, the display shows the message **Er92**

Ensure there are no obstacles within the gate movement area and repeat the initialisation procedure.

Error 93

If, during the initialisation procedure, the display shows the message **Er93**, this means the SLAVE motor is connected with incorrect polarity.

Check the SLAVE motor connection and repeat the initialisation procedure.

Error 94

If, during the initialisation procedure, the control unit fails to detect the presence of the SLAVE motor, but the operator has indicated this to be present, the display shows the message **Er94**

Check the SLAVE motor connection and repeat the initialisation procedure.

14 - TESTING AND START-UP

In implementing the automation device, these are the most important steps for guaranteeing maximum safety.

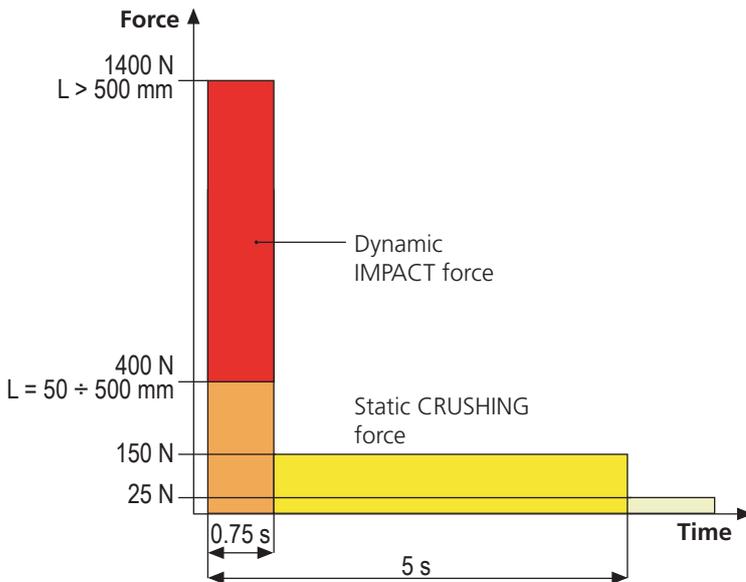
V2 recommends the application of the following technical standards:

- EN 12445 (Safety in the use of automated closures, test methods)
- EN 12453 (Safety in the use of automated closures, requirements)
- EN 60204-1 (Safety of Machinery, electrical equipment of machines, part 1: general principles)

In particular, with reference to the table in the section "PRELIMINARY CHECKS and IDENTIFICATION OF THE TYPE OF USE" in the majority of cases, it will be necessary to measure the impact force, in accordance with the provisions of EN 12445.

Adjusting the operating force is possible by programming the electronic circuit board, and the impact force profile should be measured using an appropriate device (itself also certified and subjected to annual calibration) capable of tracing the force-time graph.

The result should be in compliance with the following maximum values:



15 - MAINTENANCE

Maintenance should be performed in full compliance with the safety instructions described in this manual and in accordance with current legal and regulatory provisions.

The recommended interval between each maintenance operation is six months, the checks involved should at least relate to:

- the perfect efficiency of all warning devices
- the perfect efficiency of all safety devices
- measurement of the gate operating forces
- the lubrication of mechanical parts on the automation device (where necessary)
- the state of wear of the mechanical parts on the automation device
- the state of wear of the electrical cables on the electromechanical actuators

The result of each check should be recorded in a gate maintenance log.



16 - DISPOSAL OF THE PRODUCT

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.

AUTOMATION DEVICE USERS MANUAL

AUTOMATION DEVICE USER INFORMATION

An automation system is a great convenience, in addition to a valid security system, and with just a little, simple care, it is made to last for years.

Even if your automation device meets all the safety standards, this does not exclude the presence of residual risk, i.e. the possibility that hazardous situations may be created, usually due to irresponsible or even improper use, and for this reason we wish to offer some advice regarding the behaviour to be adopted in order to avoid problems:

Prior to using the automation device for the first time, ask the installer to explain the sources of residual risk to you, and take some time to read the instruction manual and user information delivered by the installer.
Keep the manual for any future doubts and give it to any new owners of the device.

Your automation device is a machine that faithfully follows your commands; irresponsible and improper use can make it become hazardous: do not start movement of the device if there are people, animals or objects within its radius of action.

Children: installed in accordance with technical regulations, an automation system guarantees a high level of safety. However, it is prudent to prevent children from playing near the automation device and to avoid unintentional use; never leave the remote control within the reach of children: it is not a toy!

Anomalies: as soon as the automation device shows any anomalous behaviour, remove the electricity supply and perform manual unblocking. Do not attempt any repairs yourself, but ask your installer: in the meantime, the system can operate as a non-automated device.

Maintenance: as with all machinery, your automation devices requires periodic maintenance so that it may continue to work for as long as possible, and in complete safety. Agree a periodic maintenance plan with your installer; V2 SpA recommends a maintenance plan to be performed every 6 months for normal domestic use, but this period may vary depending on the intensity of use. Any inspection, maintenance or repairs should only be performed by qualified personnel. Even if you think you know how, do not modify the system and the automation device programming and adjustment parameters: your installer is responsible for this. Final testing, periodic maintenance and any repairs should be documented by those performing the operations, and the documents held by the system owner.

Disposal: on completion of the device's operating life, ensure that disposal is performed by qualified personnel and that the materials are recycled or disposed of in accordance with valid local regulations.

Important: If your device is fitted with a radio control, the function of which appears to deteriorate over time, or has even ceased to function, this might simply depend on the batteries being run down (depending on the type, this may be from several months to up to two/three years). Before contacting your installer, try replacing the battery with the battery from another, working transmitter: if this was the cause of the problem, then simply replace the battery with another of the same type.

Are you satisfied? Should you wish to add another automation device to your home, contact the same installer and ask for a V2 SpA product: we guarantee you the most advanced products on the market and maximum compatibility with existing automation devices. Thank you for having read these recommendations, and for any present or future needs, we ask you to contact your installer in full confidence.

MOTOR UNBLOCKING

