

able.

DD Small 9000D

I

**ATTUATORE
ELETTROMECCANICO PER
PORTE BASCULANTI.
CENTRALE DIGITALE
INCORPORATA**

E

**MOTOR DE TECHO
ELECTROMECÁNICO PARA
PUERTAS BASCULANTES.
CUADRO DIGITAL
INCORPORADO**

GB

**ELECTROMECHANICAL
ACTUATOR FOR
COUNTERWEIGHT BALANCED
DOORS. BUILT-IN DIGITAL
CONTROL UNIT**

F

**OPERATEUR
ELECTROMECHANIQUE POUR
PORTES BASCULANTES.
ARMOIRE DE COMMANDE
DIGITALE INTEGRE**

18 - ANOMALIE DI FUNZIONAMENTO

In questo paragrafo vengono elencate alcune anomalie di funzionamento che si possono presentare, ne viene indicata la causa e la procedura per porvi rimedio.

Alcune anomalie vengono segnalate tramite un messaggio sul display, altre con delle segnalazioni tramite il lampeggiante o i led montati sulla centrale.

VISUALIZZAZIONE	DESCRIZIONE	SOLUZIONE
Il led OVERLOAD si accende	Significa che è presente un sovraccarico sull'alimentazione degli accessori.	1. Rimuovere la parte estraibile contenente i morsetti K1 - K10. 2. Eliminare la causa del sovraccarico. 3. Reinnestare la parte estraibile della morsettiera e verificare che il led non si accenda nuovamente. 4. Attendere che la centrale vada in stand-by e il led cominci a lampeggiare. 5. Al comando successivo la centrale rileverà che il sovraccarico è stato eliminato e ritornerà al funzionamento normale (led OVERLOAD spento)
Prelampeggio prolungato	Quando viene dato un comando di start la luce di cortesia lampeggia e la porta tarda ad aprirsi.	Significa che è scaduto il conteggio di cicli impostato e la centrale richiede un intervento di manutenzione
Il display visualizza Err2	Quando viene dato un comando di start la porta non si apre. Significa che è fallito il test del triac.	Prima di inviare la centrale alla V2 S.p.A. per la riparazione, assicurarsi che il motore sia correttamente collegato.
Il display visualizza Err3	Quando viene dato un comando di start la porta non si apre. Significa che è fallito il test delle fotocellule.	1. Assicurarsi che nessun ostacolo abbia interrotto il fascio delle fotocellule nel momento in cui è stato dato il comando di start 2. Assicurarsi che le fotocellule siano effettivamente installate altrimenti disabilitarle 3. Assicurarsi che la voce di menu Foto sia impostata su CF.Ch 4. Assicurarsi che le fotocellule siano alimentate e funzionanti: interrompendo il fascio si deve sentire lo scatto del relè.
Il display visualizza Err4	Quando viene dato un comando di start la porta non si apre.	Questa anomalia si può presentare quando si verifica una delle seguenti condizioni: 1. Se viene inviato un comando START con il motore sbloccato 2. Durante la fase di autoapprendimento se le camme finecorsa sono installate male interviene il finecorsa in apertura durante la chiusura o il finecorsa di chiusura durante l'apertura. 3. Durante il funzionamento normale se l'errore persiste inviare la centrale di comando a V2 S.p.A. per la riparazione.

VISUALIZZAZIONE	DESCRIZIONE	SOLUZIONE
Il display visualizza Err5	Quando viene dato un comando di start la porta non si apre. Significa che è fallito il test delle coste sensibili.	Assicurarsi che il menù relativo al test delle coste sia configurato in modo corretto. Assicurarsi che le coste abilitate da menù siano effettivamente installate.
Il display visualizza Err8	Quando si cerca di eseguire una funzione di autoapprendimento il comando viene rifiutato. Significa che l'impostazione della centrale non è compatibile con la funzione richiesta.	1. Verificare che gli ingressi di Start siano abilitati in modalità standard (menù Start impostato su Start) 2. Verificare che l'interfaccia ADI sia disabilitata (menù ADI impostato su no).
Il display visualizza Err9	Significa che la programmazione è stata bloccata con la chiave di blocco programmazione CL512K.	Per procedere con la modifica delle impostazioni è necessario inserire nel connettore interfaccia ADI la stessa chiave usata per attivare il blocco programmazione e sbloccarla.
Il display visualizza Err10	Quando viene dato un comando di start la porta non si apre. Significa che è fallito il test di funzionamento dei moduli ADI.	1. Verificare che il modulo ADI sia inserito correttamente 2. Verificare che il modulo ADI non sia danneggiato e funzioni correttamente
Il display visualizza Err13	Il circuito di autodiagnosi ha rilevato un malfunzionamento che impedisce il funzionamento sicuro dell'automazione	Contattare il servizio di assistenza tecnica V2 per inviare la centrale in riparazione
Il display visualizza Err14	Il circuito di autodiagnosi ha rilevato un errore nella tabella dei parametri di configurazione	Entrare nel menù di configurazione, verificare attentamente tutti i parametri e correggere gli eventuali errori. Se l'errore persiste contattare il servizio di assistenza tecnica V2 per inviare la centrale in riparazione
Il display visualizza Err15	Il limite del ciclo di lavoro è stato superato	La centrale tornerà a funzionare regolarmente dopo una pausa forzata. In questa situazione è possibile comunque attivare l'automazione in modalità FUNZIONAMENTO A UOMO PRESENTE D'EMERGENZA (capitolo 10)

INDEX

1 - IMPORTANT REMARKS	28
1.1 - PRELIMINARY CHECKS AND IDENTIFICATION OF THE TYPE TO BE USED	29
1.2 - DISPOSAL OF THE PRODUCT	30
1.3 - EU DECLARATION OF CONFORMITY	30
2 - TECHNICAL SPECIFICATIONS.....	31
3 - INSTALLATION LAYOUT	32
4 - INSTALLATION OF THE MOTOR.....	33
5 - ENDS OF STROKE ADJUSTMENT	35
6 - RELEASE FROM INSIDE	36
7 - RELEASE FROM OUTSIDE	36
8 - CONTROL UNIT.....	37
8.1 - POWER SUPPLY	37
8.2 - COURTESY LIGHTS.....	37
8.3 - Integrated light	37
8.4 - WARNING LIGHT	38
8.5 - PHOTOCELL.....	38
8.6 - SAFETY devices	38
8.7 - ACTIVATION INPUT	39
8.8 - SECOND ACTIVATION INPUT	39
8.9 - PLUG IN RECEIVER.....	39
8.10 - EXTERNAL AERIAL	39
8.11 - ELECTRICAL CONNECTIONS.....	40
9 - CONTROL PANEL	41
9.1 - USING THE PROGRAMMING KEYS.....	41
10 - ACCESS TO CONTROL UNIT SETTINGS	42
11 - USING LIMIT SWITCH CAMS.....	42
12 - QUICK SETUP	42
13 - LOADING DEFAULT PARAMETERS	43
14 - SELF-LEARNING OF WORKING TIMES	43
15 - EMERGENCY DEAD MAN OPERATION	44
16 - READING THE CYCLE COUNTER AND EVENT MEMORY.....	44
17 - PROGRAMMING THE CONTROL UNIT.....	46
18 - OPERATION DEFECTS.....	51

1 - IMPORTANT REMARKS



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 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).
- 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/CE).
- It is mandatory to comply with standard EN 13241-1 and any other national provisions.
- Also the automation upstream electric system shall comply with the laws and rules in force and be carried out workmanlike. V2 S.p.A. declines any responsibility in case of automation upstream electric system not complying with the laws and rules in force and not carried out workmanlike
- The gate's thrust force and its sensitivity to obstacles shall be measured using an appropriate tool and adjusted in compliance with the maximum permitted values, provided in standard EN 12453.
- This test and measurement of force may only be performed by a professional. When hitting an obstacle the door has to stop and reverse (completely or partially, depending on the setting of the PCB).
If the gate does not slide on the requested path or if it does not change its sliding direction as soon as it detects an obstacle, you need to readjust the obstacle detection sensitivity. Then please repeat the test.
If the door after the performed corrections does not stop and reverse according to the valid norms, the door may not be operated automatically.
- The use of the actuator in dusty, saline or explosive environment is forbidden
- The opener is designed for operation in dry rooms exclusively
- For the safety and life of persons it is absolutely necessary to follow all instructions.
- Keep these instructions save for later reference
- Do not permit children to play with the automated garage door. Transmitters are to be kept safe and away from children!
- Electromechanical actuators are not intended for use by people (including children) with reduced physical, sensory or mental abilities, or with lack of experience and knowledge, unless they are supervised or have been instructed on the use of the actuator by a person responsible for their safety.
- The sound pressure level of the A-weighted emission is less than 70 dB (A)
- Cleaning and maintenance intended to be carried out by the user must not be carried out by children without supervision
- Before working on the system (maintenance, cleaning), always disconnect the product from the power supply and any buffer batteries

- Only operate the door if the entire door area is in your field of view. Always be sure, that no persons or objects are located within traveling range of the door
- Do not use the opener when service or adjustment work is required. A badly balanced door, or a faulty garage door system may cause injuries.
- Please inform all persons using the door system on how to operate it correctly and safely.
- Check often the automation, particularly the cables, springs and mechanic parts for wear and tear, damages and unbalancing.
- The plug must be at easy reach, after the installation.
- The data on the plate of the product are written on the label put next to the connection terminal board.
- Any control devices installed in fixed locations (such as buttons or similar devices) must be positioned within the field of view of the gate, at a height of at least 1.5m from the ground.
It is essential that they are mounted out of reach of children!
- The automatic door may work unexpectedly, therefore do not allow anything to remain in the path of the door.
- Affix warning signs indicating the risk of being caught in the door where they may be seen immediately or in the vicinity of the permanently mounted push button.

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 - PRELIMINARY CHECKS AND IDENTIFICATION OF THE TYPE TO BE USED

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 door must be suitable to be automated (check the door operation manual and directions). The door structure itself must be stout and appropriate to be automated.
- Check the door to be provided with anti-fall system (independent of the suspension system).
- The door must be functional and safe.
- The door must open and close easily without any friction.
- The door must be properly balanced both before and after its automation: stopping the door in any position, it must not move (carry out a balance weight adjustment, if necessary)..
- Fix the engine steadily and using suitable material.
- If necessary, make the structural calculation and enclose to the technical specification paper.
- It is advisable to install the geared motor in the centre of the door; it is permitted to move aside 100 mm to install the sliding arm accessory 162504 (see paragraph 10 page 27) .
- In case of counterbalanced door, check that the minimum distance between the track and the door must not be under 20 mm

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

	CLOSURE USE TYPE		
TYPE OF ACTIVATION COMMANDS	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.



1.2 - 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.

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): DD SMALL 9000D

Description: electromechanical actuator for garage doors

- is intended to be installed on garage doors 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 ROHS-3 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

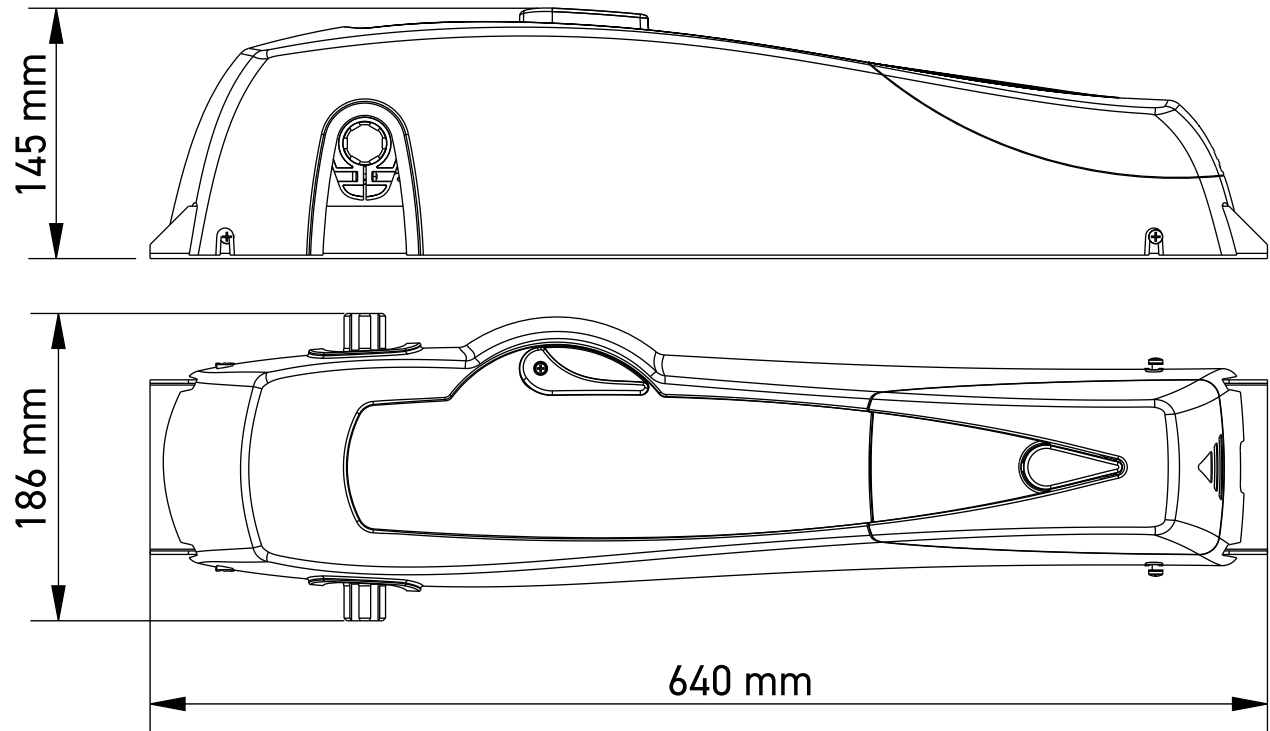
The person empowered to draw up the declaration and to provide the technical documentation:

Roberto Rossi

Legal representative of V2 S.p.A.
Racconigi, 01/03/2024

2 - TECHNICAL SPECIFICATIONS

Power supply (Vac - Hz)	230-50
Absorption at full load (A)	2,5
Maximum electrical power (W)	575
Maximum load of powered accessories (W)	3
Consumption in standby mode (W)	<0,5
Motor speed (rpm)	1,6
Capacitor (µF)	8
Duty cycle (cycles/hour)	36
Weight (kg)	9
Maximum door surface (m²)	9
Protection class (IP)	20
Operating temperature (C°)	-20 ÷ +50



3 - INSTALLATION LAYOUT



COMPONENTS

- 1 Motor
- 2 Transmitter
- 3 Control unit
- 4 Receiving module

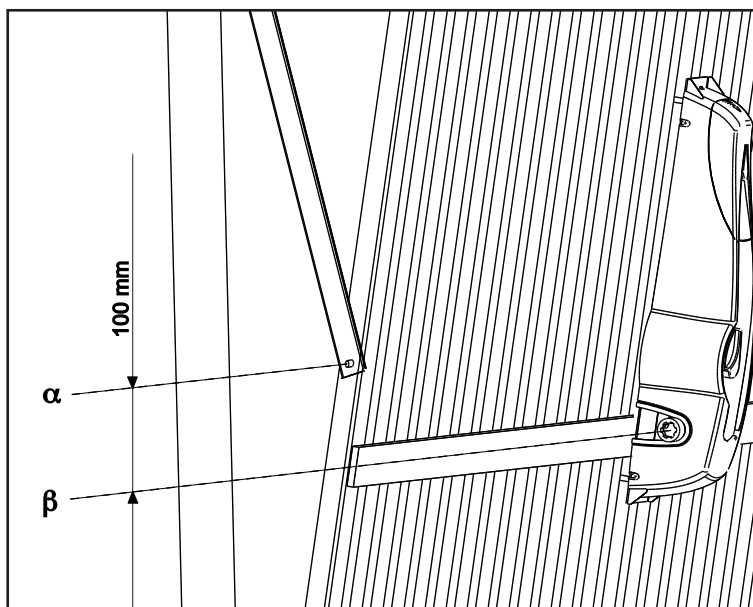
ADDITIONAL ACCESSORIES

- A Key selector
- B Photocell
- C Flashing light
- D Digital selector via radio
- E Safety edges

LENGTH OF THE CABLE	< 10 metres	from 10 to 20 metres	from 20 to 30 metres
Power supply 230V	2 x 1,5 mm ²	2 x 1,5 mm ²	2 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
Safety edges	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

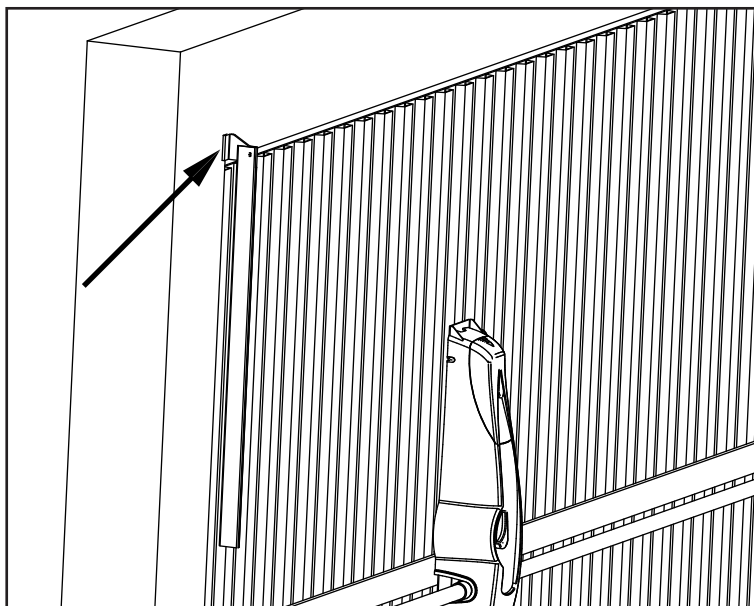
4 - INSTALLATION OF THE MOTOR

1. Identify the axis of door arm α and fix a new axis β (which will be the axis of rotation of the actuator torque shaft), parallel as to α and placed 100 mm down.
2. Place the actuator in the middle of the sliding door and fix the longitudinal member fastening points.
3. Separate the ratiomotor from the longitudinal member by unscrewing the two bolts, then fasten the longitudinal member to the door and assembly the ratiomotor again.

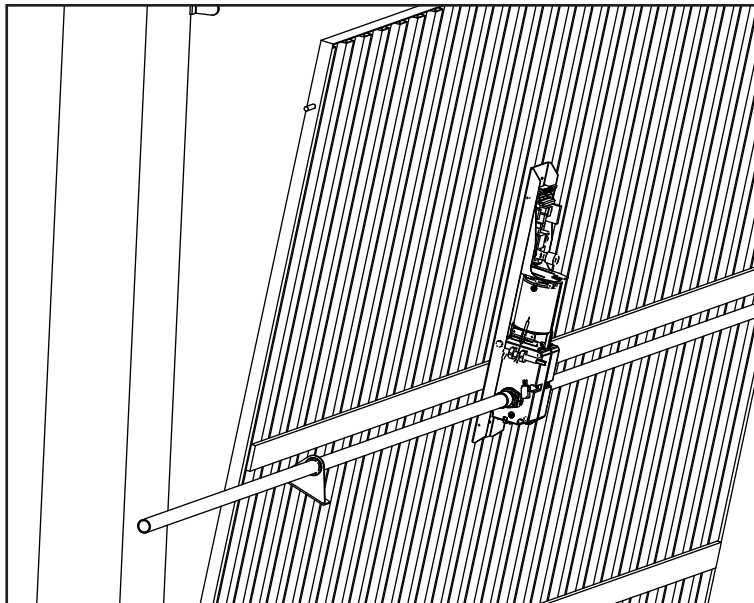


4. Fasten the anchoring bracket of the telescopic arm (code 162405) on the door upper cross member or on the wall
5. Fasten the telescopic arm on the anchoring bracket by means of the proper pins and "seeger"

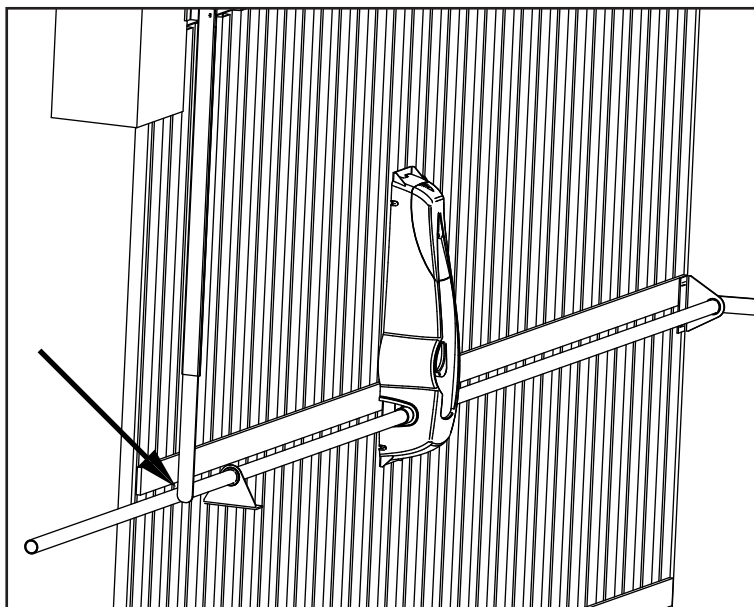
⚠ WARNING: the telescopic arm must be assembled in such a way as to pass between the door case and the door arm without any friction. In case this is not possible due to the lack of space, make use of the special curve arms



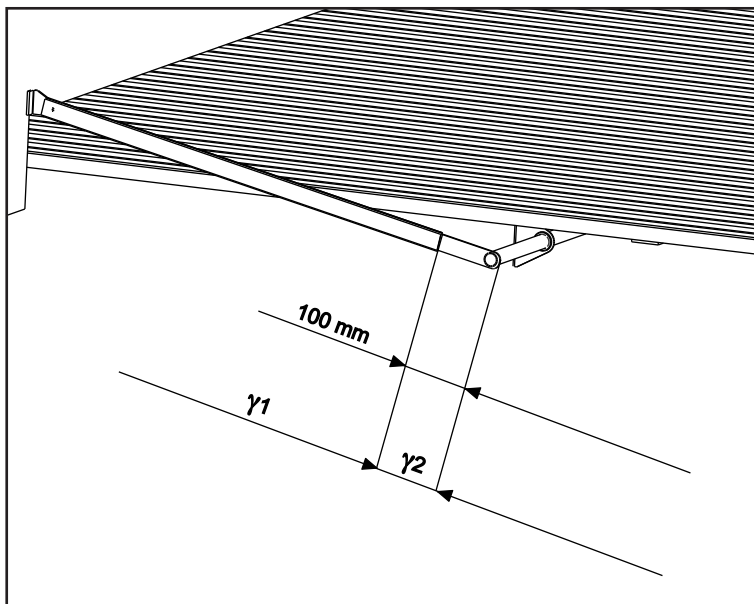
6. Enter the drive tube equipped with a bush into the drive shaft and enter the bracket by means of the special plastic bushing (code 162406) into the other tube end



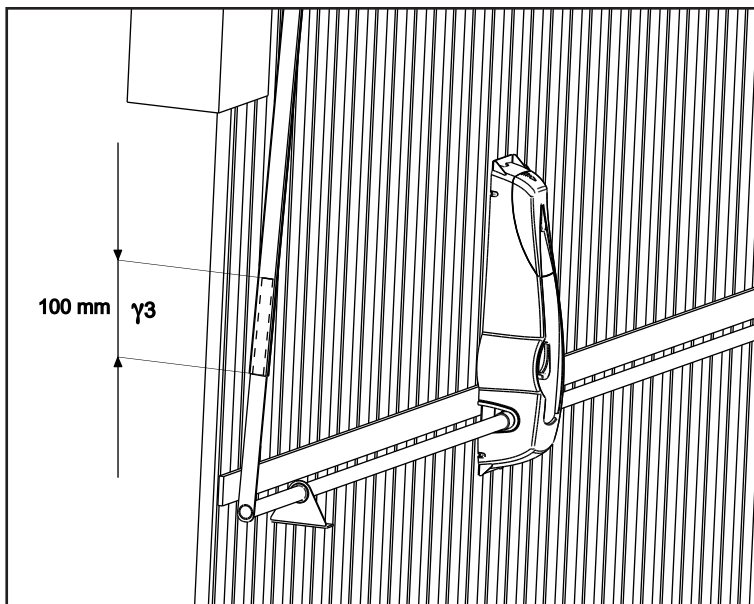
7. Check that the tube is perfectly horizontal and perpendicular as to the telescopic arm, then cut the part of exceeding tube



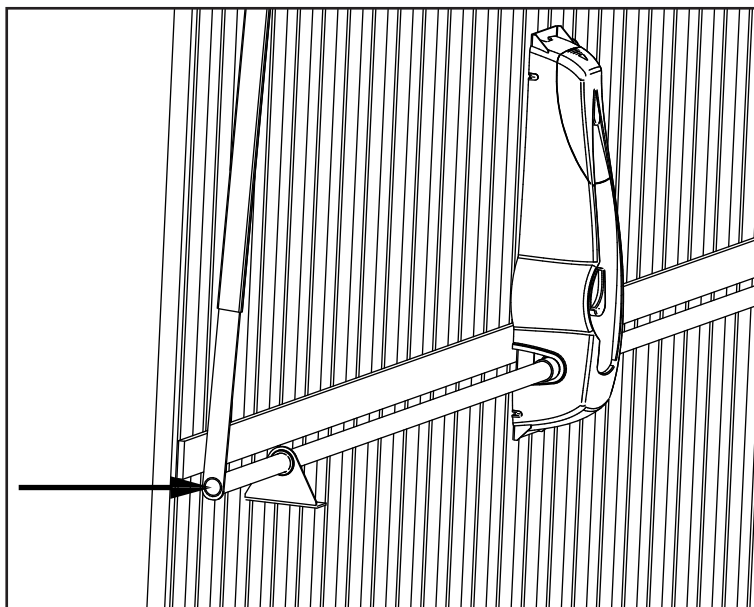
8. Drive the door to its max. opening position and cut the $\gamma 1$ upper part of the telescopic arm so that there is a $\gamma 2$ 100-mm lower part projection by the upper side



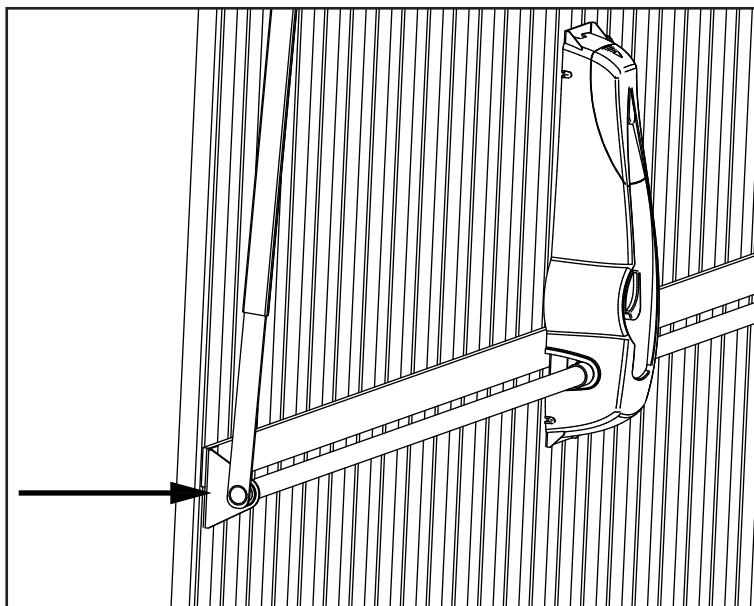
9. Drive the door to its closing position and cut the telescopic arm lower part so that the $\gamma 3$ inner part is of 100 mm



10. By keeping the door closed, weld the tube base to the $\gamma 2$ lower part free end of the telescopic arm 10.
11. Enter and finally fasten the telescopic arm on the anchoring bracket by fastening all pins by means of "seeger" supplied



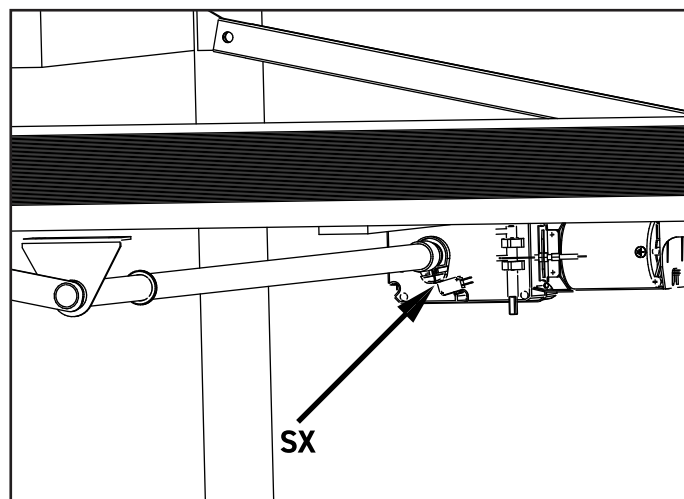
12. Fasten the bracket, which has been previously entered into the tube, to the sliding door
12. Repeat what described at points 3 ÷ 11 as for the other side of the door
13. Release the ratiomotor and check that the sliding door opening and closing operations can be easily performed. Otherwise, the door must be balanced again by increasing the balance weights.



5 - ENDS OF STROKE ADJUSTMENT

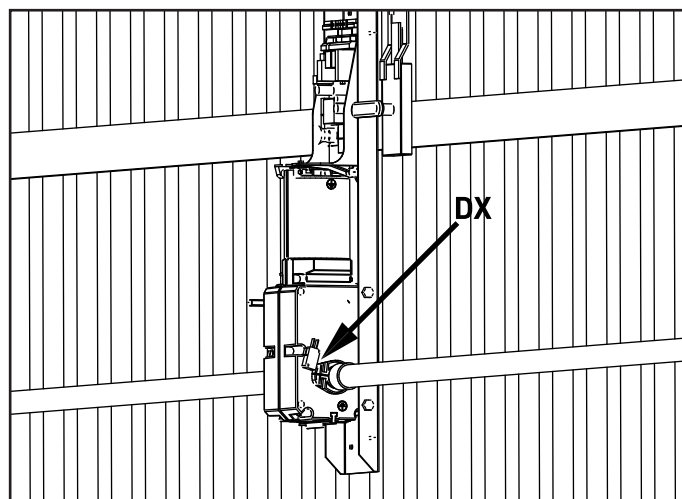
Opening end of stroke

Drive the sliding door to approx. 50 mm from its max. opening, then adjust the left cam so that the microswitch is operated. Fasten the cam by screwing it.



Closing end of stroke

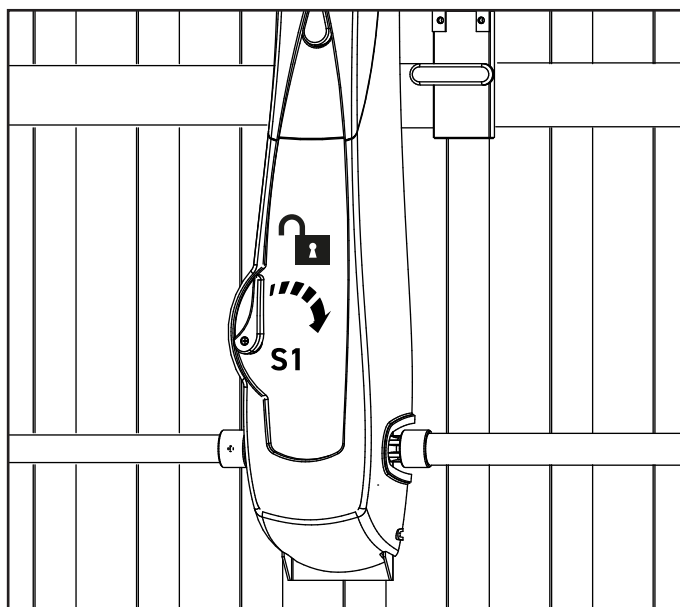
Drive the sliding door to its max. closing position and adjust the right cam so that the microswitch is operated. Fasten the cam by screwing it.



6 - RELEASE FROM INSIDE

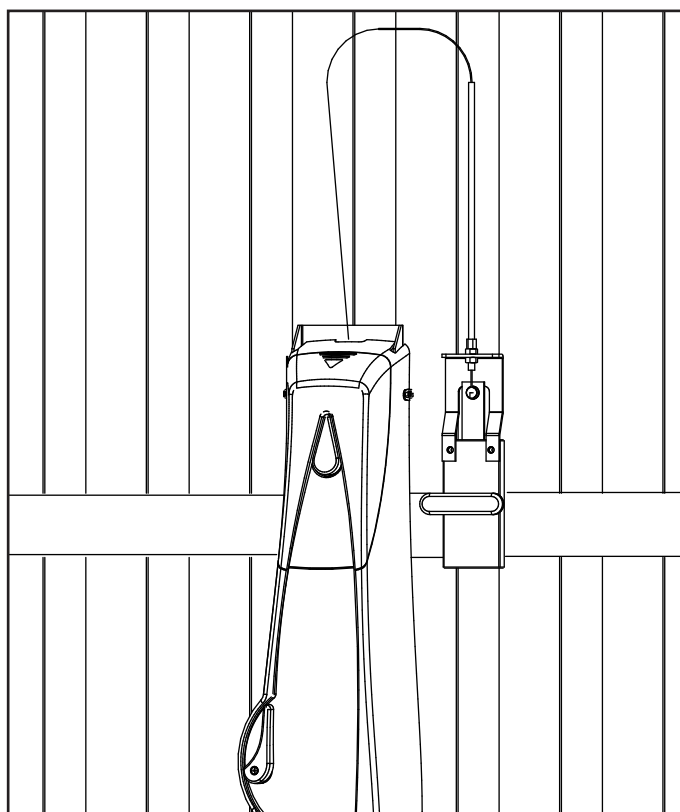
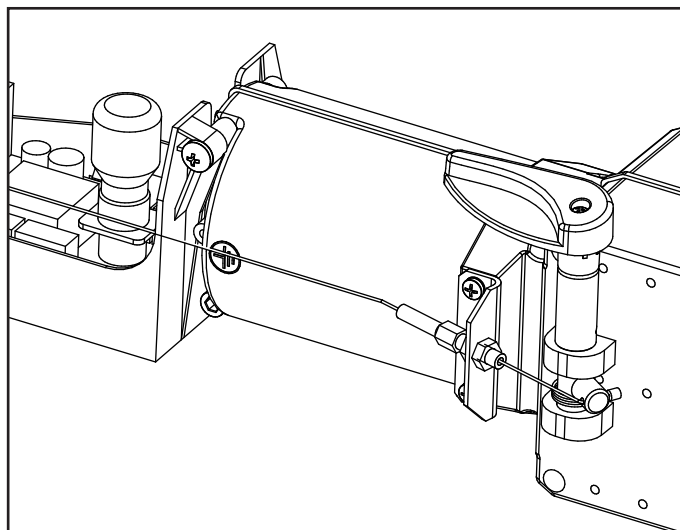
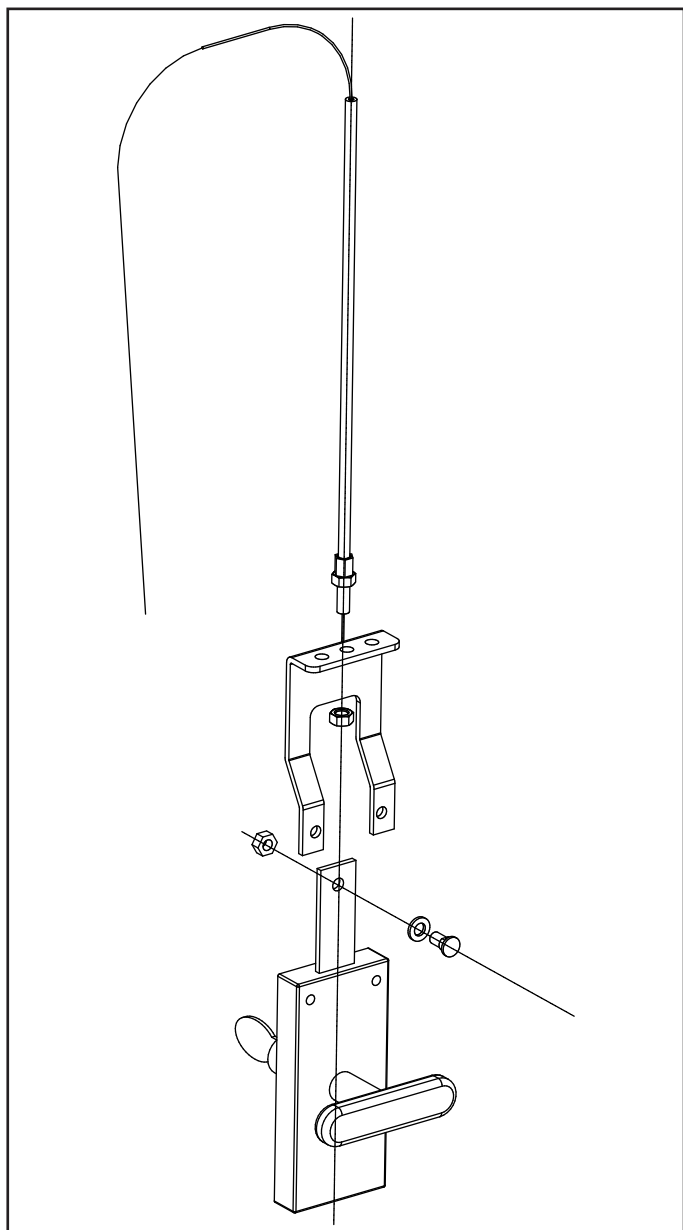
Turn downwards the **S1** release lever in order to release the automation from inside.

Turn the **S1** lever to its original position in order to reset the automation



7 - RELEASE FROM OUTSIDE

The special release kit must be installed to release the automation from outside (cod. 162403). Assembly all parts as shown in figures



8 - CONTROL UNIT

KB11 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:

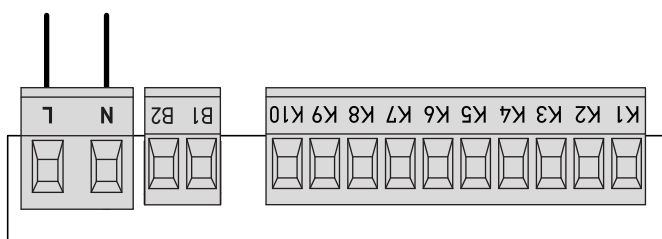
- Automatic control for the null current relay switch.
- Power adjustment with wave shutting.
- Obstacle detection by means of monitoring start condenser voltage.
- Automatic learning of the operation time.
- Specific entrances for end stops.
- Tests for safety devices (photocells, ribbons and triacs) 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.
- Control unit programming can be locked through the optional CL512K key

⚠ WARNING: Installation of control unit and safety devices must be carried out with power disconnected

8.1 - 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 power supply cables to terminals **L** and **N** of control unit

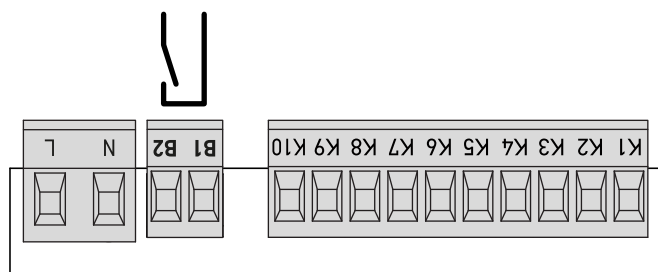


8.2 - COURTESY LIGHTS

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

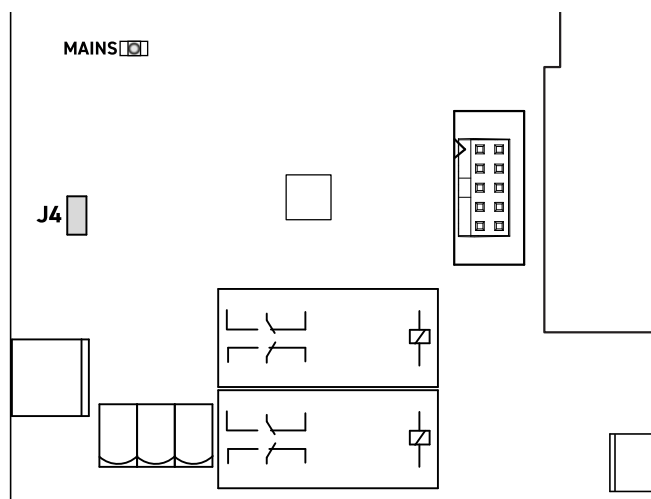
Connect the cables to terminals **B1** and **B2**.



8.3 - INTEGRATED LIGHT

The actuator has a LED light integrated into the control unit to illuminate the passage during the maneuver. The light turns on when the door is moving and remains on after stopping for a settable time (r.LUC parameter).

The light is always off during the programming of the control unit menus, to avoid inconvenience to the operator. If you do not want to have the integrated light, you can eliminate the jumper as shown in the figure.



⚠ WARNING: the integrated light is connected to the 230V power supply: never touch the LED power circuits or the jumper when the control unit is connected to the mains. Before removing or inserting the jumper, the control unit must be strictly disconnected from the mains.

8.4 - WARNING LIGHT

Thanks to the WARNING LIGHT output, the KB11 central unit allows you to monitor the state of the door in real time and the kind of flashing signal indicates the four possible conditions:

STOP: light off

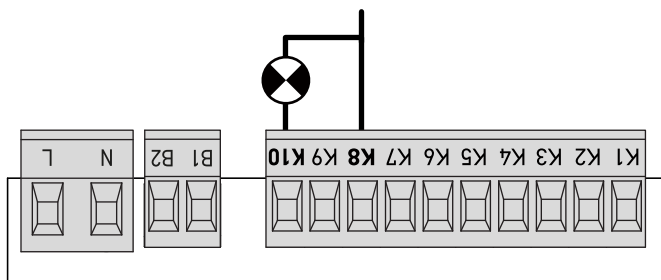
IN PAUSE: light always on

OPENING: the light flashes slowly (2 Hz)

CLOSING: the light flashes rapidly (4 Hz)

The output provides the connection of a 24V bulb. The maximum charge shall be included in the 3W at the disposal for the accessories.

Connect the cables to terminals **K10 (+)** and **K8 (-)**.



8.5 - PHOTOCELL

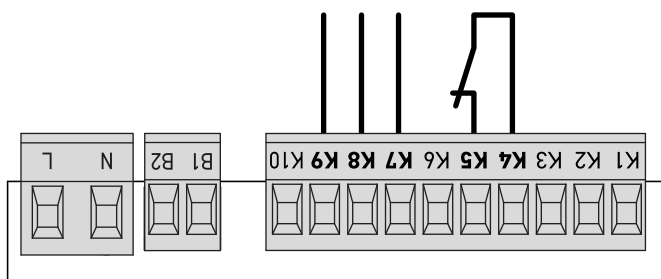
KB11 control unit supplies a 24VAC power supply to photocells and it can perform a photocell operation test before starting the door opening phase. Photocell power terminals are protected by an electronic fuse that stops current in case of overload.

The photocells are active only during the closing phase and, if required, with standstill door. In case intervention, the control unit immediately opens the door, not waiting for the release.

- Connect power supply cables of photocells transmitter between terminals **K9 (+)** and **K8 (-)** of the control unit.
- Connect power supply cables of photocells receiver between terminals **K7 (+)** and **K8 (-)** of the control unit.
- Connect receiver output between terminals **K4** and **K5** of the control unit. Use outputs having normally closed contact.

⚠ WARNING:

- if several couples of photocells are mounted, their outputs must be connected in series.
- In case of reflection photocells, power supply must be connected to terminals **K8** and **K9** of the control unit to carry out the operation test..



8.6 - SAFETY DEVICES

The KB11 control unit is equipped with an input to manage safety devices such as a STOP button or safety edge.

Connect the cables of the safety device between terminals **K1** and **K4** of the control unit.

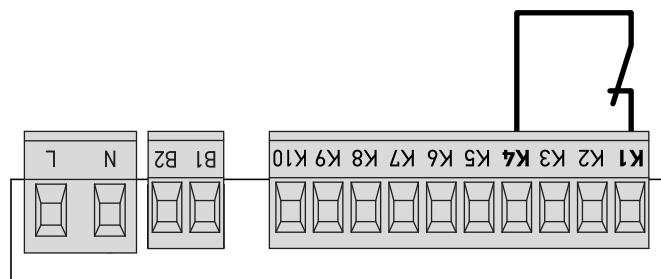
The behaviour of the control unit in the event of a safety device tripping depends on how the **SiC** parameter is set:

no: the safety device is ignored

SEoP: the safety device must have a normally closed contact; if the contact opens, the door stops immediately. If the safety device intervenes while the door is open, the automatic reclosing function is always disabled; in order to reclose the door, a start command must be given (if the paused start function is disabled, it is temporarily re-enabled to allow the door to be unlocked). If several devices are used to generate the stop, the outputs must be connected in series.

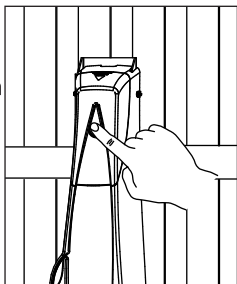
EdGE: provision for a conductive rubber safety edge with a nominal resistance of 8.2 kohm to prevent crushing or shearing on the inside of the door. If the rib is crushed during closing, the door opens again completely. If several conductive rubber ribs are used, the outputs must be cascaded and only the last one must be terminated at nominal resistance.

Ed.AP: provision for a safety edge as in the previous case, to prevent crushing on the outer side of the door. If the rib is crushed during opening, the door retracts for 3 seconds and then stops; if it is crushed during closing, the door stops immediately.

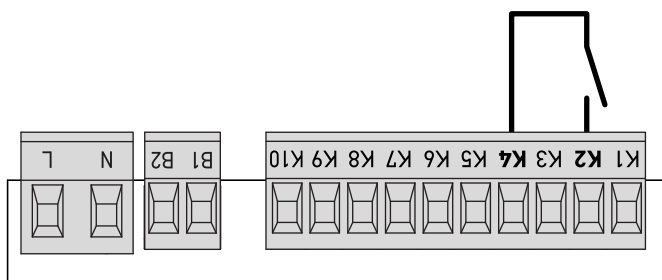


8.7 - ACTIVATION INPUT

The KB11 central unit has an activation input with N.A. contact that can be activated using the pushbutton found on the motor lid or using a transmitter (the pushbutton should be tuned to channel 1 on the MRx receiver).



Use the **K2** and **K4** clamps to connect up an external pushbutton.



8.8 - SECOND ACTIVATION INPUT

The KB11 control unit has a second activation input with N.O. contact, the operation of which depends on the setting of the **StAr** parameter:

no, StAr : the entry is ignored

orol : closing the contact does not cause the door to open, but can be used to keep the door open if the opening has been commanded by the START input or by remote control.

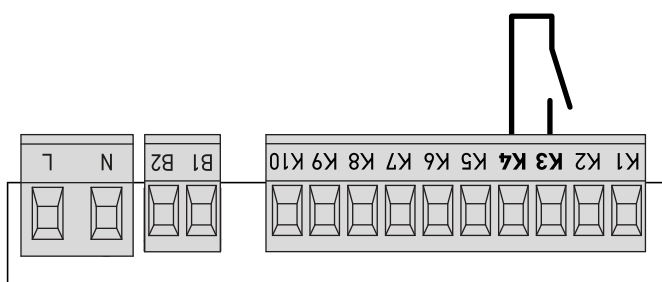
dmr, RP.Ch : the input is used to control closing (the start terminal always controls opening).

St.Pr : the terminal is used for a presence detection device; closing the contact causes the door to open, and the automatic reclosure time countdown is suspended until the contact closes again.

St.Fi : the terminal is used for a fire alarm; the operation is similar to the **St.Pr** setting, but the automatic closing is permanently disabled and the door must be closed with an explicit command, once the contact is closed again.

In.ou : The input has the same function as the start input, but if a device that takes into account the direction of passage (traffic light) is connected to the ADI interface, terminal **K2** enables the incoming passage and terminal **K3** enables the outgoing passage.

To connect an external button, use terminals **K3** and **K4**.



8.9 - PLUG IN RECEIVER

KB11 control unit is suitable for plugging in a Personal Pass MRx receiver having a high-sensitivity super-heterodyne architecture.

! mWARNING: 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.

MRx module receiver is provided with 4 channels and each of them is suitable for a command of KB11 control unit:

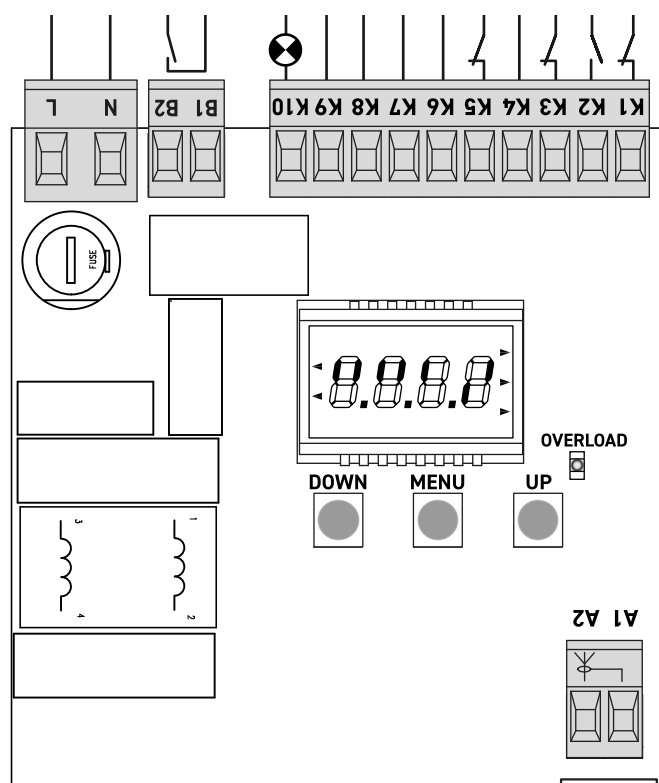
- CHANNEL 1 → START
- CHANNEL 2 → CLOSING / EXIT ACCESS
- CHANNEL 3 → STOP
- CHANNEL 4 → COURTESY LIGHT

WARNING: Before programming 4 channels and function logics read carefully the instructions of MRx.

8.10 - EXTERNAL AERIAL

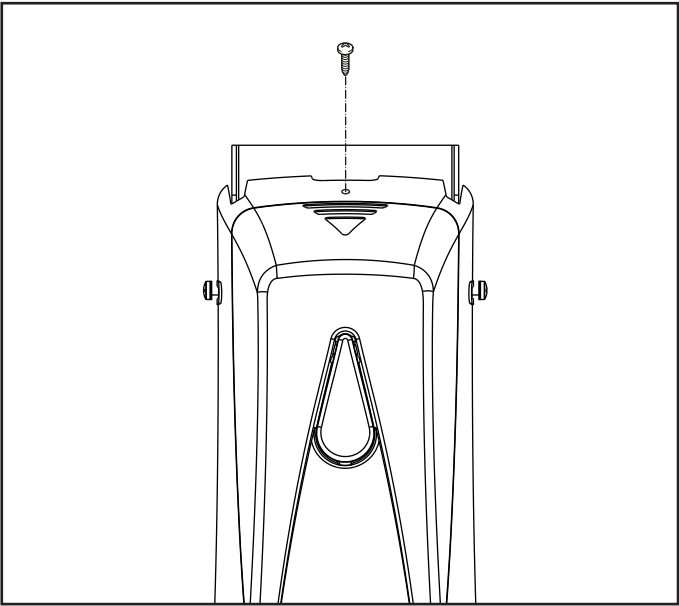
We suggest to use the external aerial (model ANS433) in order to guarantee the maximal range.

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

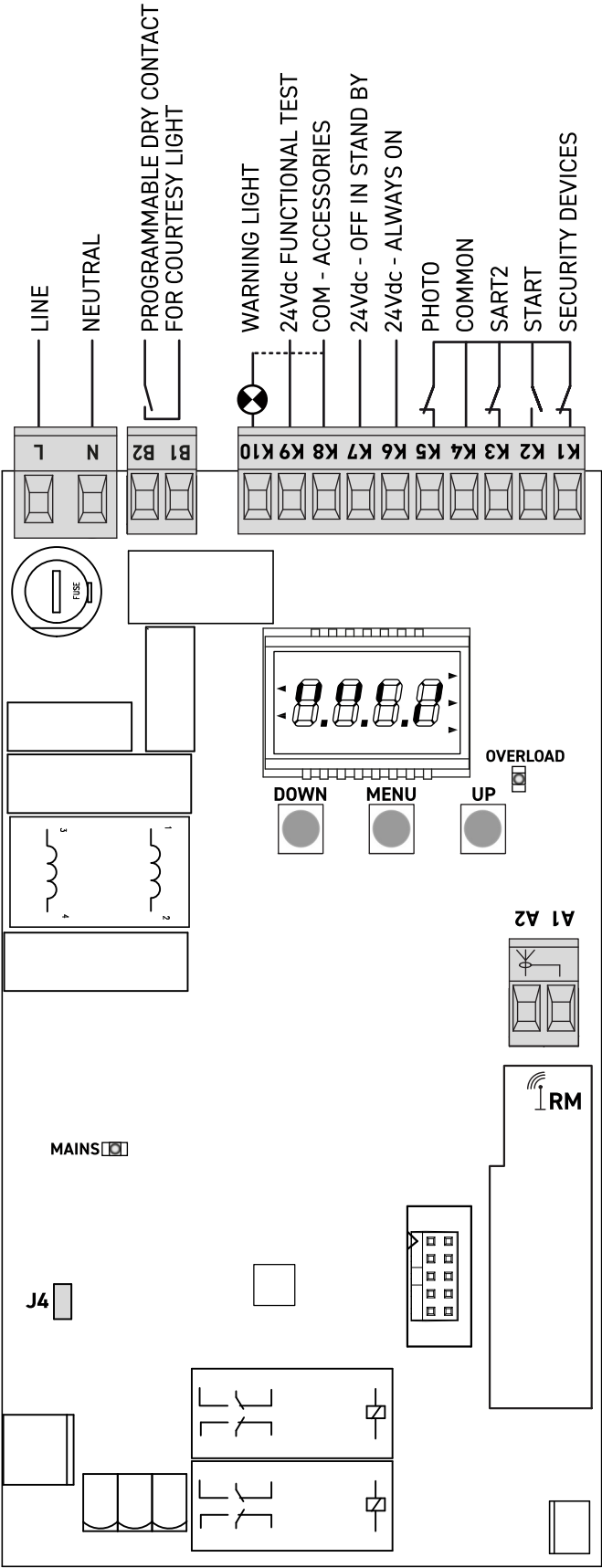


8.11 - ELECTRICAL CONNECTIONS

To access the connection compartment, you need to unscrew the screw indicated in the figure and then remove the cover



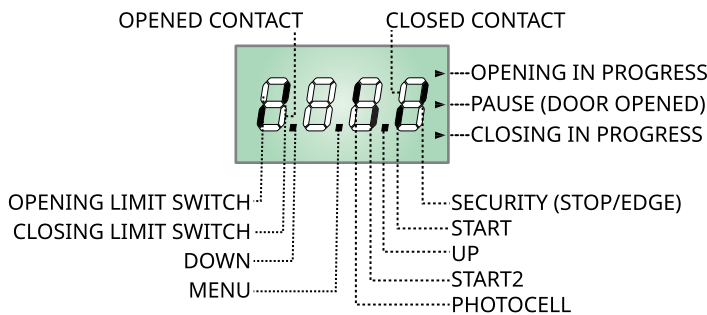
A1	Antenna shielding
A2	Antenna
K1	Safety edge Resistive rubber edge STOP command N.C.
K2	Opening command for connecting traditional devices with N.O. contact
K3	Second activation command
K4	Common (-)
K5	Photocell. N.C. contact
K6 - K8	24Vdc power supply for activation devices also available when the control unit is in stand-by
K7 - K8	24Vdc power output for photocells and other accessories
K9 - K8	Photocell TX power supply for functional test
K10 - K8	Warning light
B1 - B2	Dry contact for courtesy light output
L	Power supply phase
N	Power supply neutral
F1	F5A
MAINS	Signals that the control unit is powered
OVERLOAD	Signals an overload on the power supply
J4	Jumper to isolate the integrated light



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. Firmware version, e.g. P- 2.0, will be viewed in the following 1.5 sec. Panel will be viewed upon completion of this test.

At the end of this test the control panel appears:



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 picture above shows the case of START, STOP, FOTO, FCA and FCC inputs correctly connected with the door closed).

NOTE: when the control unit is in stand-by, the status of the inputs is undefined and is not shown on the display. The word St.by appears instead.

NOTE: if an ADI module is used, other segments may appear on the display, see the dedicated paragraph "ADI INTERFACE"

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 display right side show the door status:

- The highest arrow turns on when the door 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 door 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 door 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 - USING THE PROGRAMMING KEYS

The programming of the functions and times of the control unit is carried out via a specific configuration menu, accessible and explorable via the 3 keys **UP - DOWN - MENU** positioned under the control unit display.

WARNING: Outside the configuration menu, pressing the DOWN key activates the START command.

There are three types of menu items:

- Function menu
- Time menu
- Value menu

Setting the function menus

The function menus allow you to choose a function from a group of possible options. When you enter a function menu, the currently active option is displayed; you can scroll through the available options using the **UP** and **DOWN** keys. Pressing the **MENU** key activates the displayed option and returns you to the configuration menu.

Setting the time menus

Time menus allow you to set the duration of a function. When you enter a time menu, the currently set value is displayed.

- Each press of the **UP** button increases the set time and each press of the **DOWN** button decreases it.
- By holding down the **UP** button you can quickly increase the tempo value, until it reaches the maximum allowed for this item.
- Similarly, by holding down the **DOWN** button you can quickly decrease the time until it reaches the value 0.0"
- In some cases, setting the value to 0 is equivalent to disabling the function: in this case, instead of the value 0, no is displayed.
- Pressing the **MENU** button confirms the displayed value and returns to the configuration menu.

Setting value menus

Value menus are similar to time menus, but the value set is any number. Holding down the **UP** or **DOWN** button slowly increases or decreases the value. Pressing the **MENU** button confirms the displayed value and returns to the configuration menu.

The following pages show the main programming menus of the control unit.

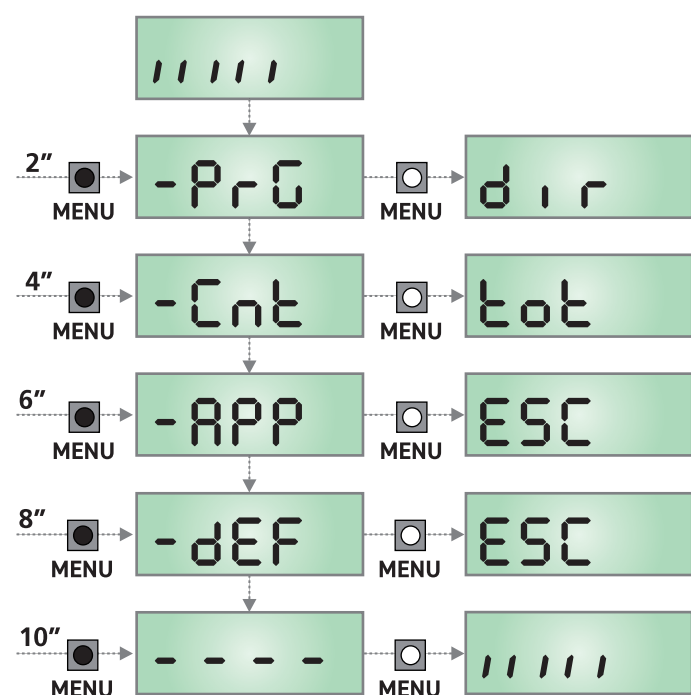
To move within these menus, you must use the 3 keys **UP**, **DOWN** and **MENU** according to the indications in this table:

 MENU	Press and release the MENU button
 2" MENU	Hold down the MENU button for 2 seconds
 MENU	Release the MENU button
 UP	Press and release the UP button
 DOWN	Press and release the DOWN button

10 - ACCESS TO CONTROL UNIT SETTINGS

1. Press and hold the MENU button until the display shows the desired menu
2. Release the MENU button: the display shows the first item of the submenu
 - **PrG** Programming the control unit (chapter 17)
 - **Cnt** Cycle counter (chapter 16)
 - **APP** Self-learning of work times (chapter 14)
 - **DEF** Loading of default parameters (chapter 13)

⚠ WARNING: if no operation is performed for more than a minute, the control unit exits programming mode without saving the settings and the changes made are lost.



11 - USING LIMIT SWITCH CAMS

Depending on the setting of the **FC.En** parameter, the control unit uses a different procedure to detect the end of the door stroke and reacts differently to the detection of the obstacle.

no: the limit switch inputs are ignored and during self-learning the stroke is detected using the obstacle sensor. In normal operation, the motor is operated for the time measured during self-learning, and the speed is reduced when the time set as **t.r.AP** or **t.r.Ch** is missing to complete the manoeuvre.

If an obstacle is detected before the slowdown begins, the door movement is reversed (for 3 seconds if the obstacle was detected during opening, until complete opening if the obstacle was detected during closing).

If the previous manoeuvre has not been completed (triggering of a safety device or obstacle sensor), the opening or closing duration is increased by the time set in the **ASM** parameter. If the times **t.r.AP** and **t.r.Ch** are zero, the slowdown does not occur and the obstacle is considered a limit switch whenever it is detected.

Stop: the cams must be adjusted to intervene exactly when the door is completely open or closed; during learning the stroke is detected using the limit switches and the intervention of the obstacle sensor is considered an error. In normal operation the control unit uses the time detected during learning to reduce the speed when it assumes that the **t.r.AP** or **t.r.Ch** time is missing, but the maneuver continues until the limit switch intervenes, even if the time is longer than expected.

The intervention of the obstacle sensor always causes the inversion, as described in the previous paragraph.

near: the cams must be adjusted to intervene when the door is close to the fully open or closed position; during learning the actual stroke is detected using the obstacle sensor. In normal operation the control unit controls the door at full speed until the limit switch intervenes, and then at reduced speed for the time set as **t.r.AP** or **t.r.Ch**.

The intervention of the obstacle sensor before passing over the limit switch causes the inversion as described in the previous paragraphs. If the **t.r.AP** or **t.r.Ch** times are zero, the motor does not slow down when passing over the limit switch, but continues at normal speed until the obstacle sensor intervenes (door in stop position).

NOTE: to prevent the motor from getting stuck when pushing on the stop, thus preventing any manual release, it is possible to request a brief reversal at the end of the stroke using the **r.LA parameter.**

12 - QUICK SETUP

This paragraph illustrates a quick procedure to configure the control unit and put it into operation immediately.

It is recommended to initially follow these instructions, to quickly verify the correct functioning of the control unit, the motor and the accessories, and subsequently modify the configuration if some parameter is not satisfactory.

For the location of the items within the menu and the options available for each item, refer to the paragraph "Control panel configuration".

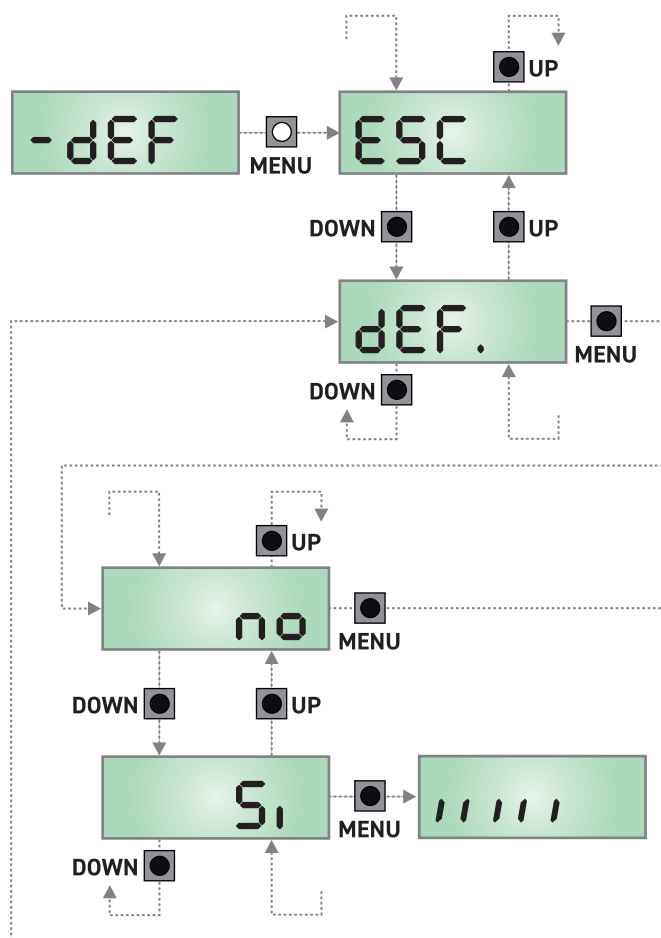
1. Recall the default configuration (chapter 13).
2. Set items **Foto**, **Sic** e **FC.En** according to the safety devices installed on the door..
3. Start the self-learning cycle (chapter 14).
4. Check the correct functioning of the automation and if necessary modify the configuration of the desired parameters.

13 - LOADING DEFAULT PARAMETERS

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

⚠ WARNING: This procedure will result in the loss of all custom parameters.

1. Hold down the **MENU** button until the display shows **-dEF**
2. Release the **MENU** button: the display shows **ESC** (press the **MENU** button only if you want to exit this menu)
3. Press the **DOWN** button: the display shows **dEF.**
4. Press the **MENU** button: the display shows **no**
5. Press the **DOWN** button: the display shows **S_i**
6. Press the **MENU** button: all parameters are rewritten with their default value (see chapter 17), the control unit exits programming and the display shows the control panel.



14 - SELF-LEARNING OF WORKING TIMES

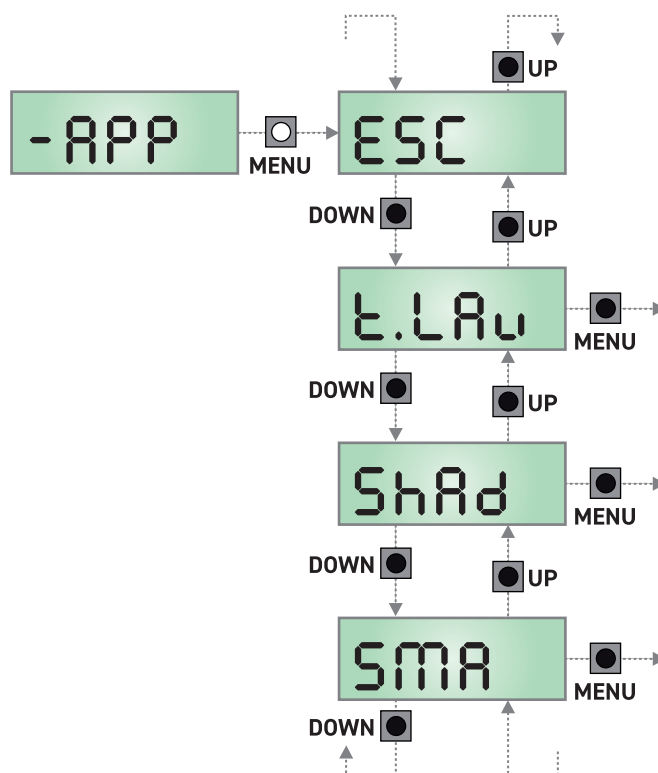
This menu allows you to automatically learn the duration of the door opening and closing maneuver. If the door passes in front of the photocell during its travel, interrupting its beam, it is also possible to establish a shadow zone within which the activation of the photocell has no effect on the maneuver; the two types of learning can be performed independently, or in sequence.

Note: if you perform the shadow zone learning, this function is automatically enabled, even if the S_{hAd} parameter was not previously set.

WARNING: to perform the automatic learning procedure, you must disable the ADI interface via the i.Adi menu. If there are safety devices that are controlled via the ADI module during the learning phase, they will not be active.

WARNING: before proceeding, make sure you have correctly adjusted the limit switch cams and set the desired operating mode (chapter 11).

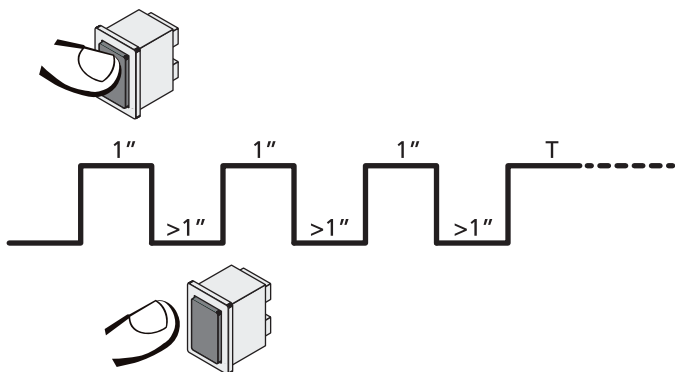
1. Hold down the **MENU** button until the display shows **-APP**
2. Release the **MENU** button: the display shows **ESC** (press the **MENU** button only if you want to abandon the procedure).
3. Using the **UP** and **DOWN** buttons, select the desired type of self-learning: **t.LAR** to learn the duration of the maneuver, **S_{hAd}** to adjust the shadow area of the photocell, **S_{MA}** to perform both learnings.
4. Press the **MENU** button to start the self-learning cycle: the display shows the control panel and begins the set procedure (if **S_{MA}** is selected, the control unit will perform two opening/closing cycles).



15 - EMERGENCY DEAD MAN OPERATION

This operational mode can be used to move the gate in DEAD MAN mode in 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 `SErE` parameter is set as `SErN`, 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 - READING THE CYCLE COUNTER AND EVENT MEMORY

The KB11 control unit keeps track of the gate opening cycles completed and, if required, signals the need for maintenance after a pre-set number of maneuvers. It also records the events that occurred during operation, associating each with a code and the date/time in which it occurred; this information must be communicated to the assistance service in the event of problems.

WARNING: The correct date/time information for an event is stored only if the control panel is supplied with the information by a device equipped with a clock, such as the WiFi interface.

There are three counters available:

- Non-resettable totalizer of completed opening cycles (`LoE` option of the `CnE` item)
- Decreasing counter of cycles remaining until the next maintenance intervention (`SEru` option of the `CnE` item). When the counter of cycles remaining until the next maintenance intervention reaches zero, the control unit signals the maintenance request by means of an additional 5-second pre-flashing. The signal is repeated at the beginning of each opening cycle, until the installer accesses the counter reading and setting menu, possibly programming the number of cycles after which maintenance will be requested again. If a new value is not set (i.e. the counter is left at zero), the maintenance request signaling function is disabled and the signaling is no longer repeated.
- Event counter (`EuEn` option)

The following diagram illustrates the procedure for reading the totalizer, reading the number of cycles remaining until the next maintenance intervention and programming the number of cycles remaining until the next maintenance intervention (in the example the control unit has completed 12451 cycles and 1300 cycles remain until the next intervention); the code of the last recorded event is 176, and it occurred at 14.14.19 on August 20th.

Area 1 represents the reading of the total count of completed cycles: with the **UP** and **DOWN** buttons it is possible to alternate the display of thousands or units.

Area 2 represents the reading of the number of cycles remaining until the next maintenance intervention: the value is rounded to the nearest hundreds.

Area 3 represents the setting of this last counter: when the **UP** and **DOWN** buttons are pressed for the first time, the current value of the counter is rounded to the nearest thousands; each subsequent press increases the setting by 1000 units or decreases by 100. The count previously displayed is lost.

Area 4 represents the reading of the event memory.

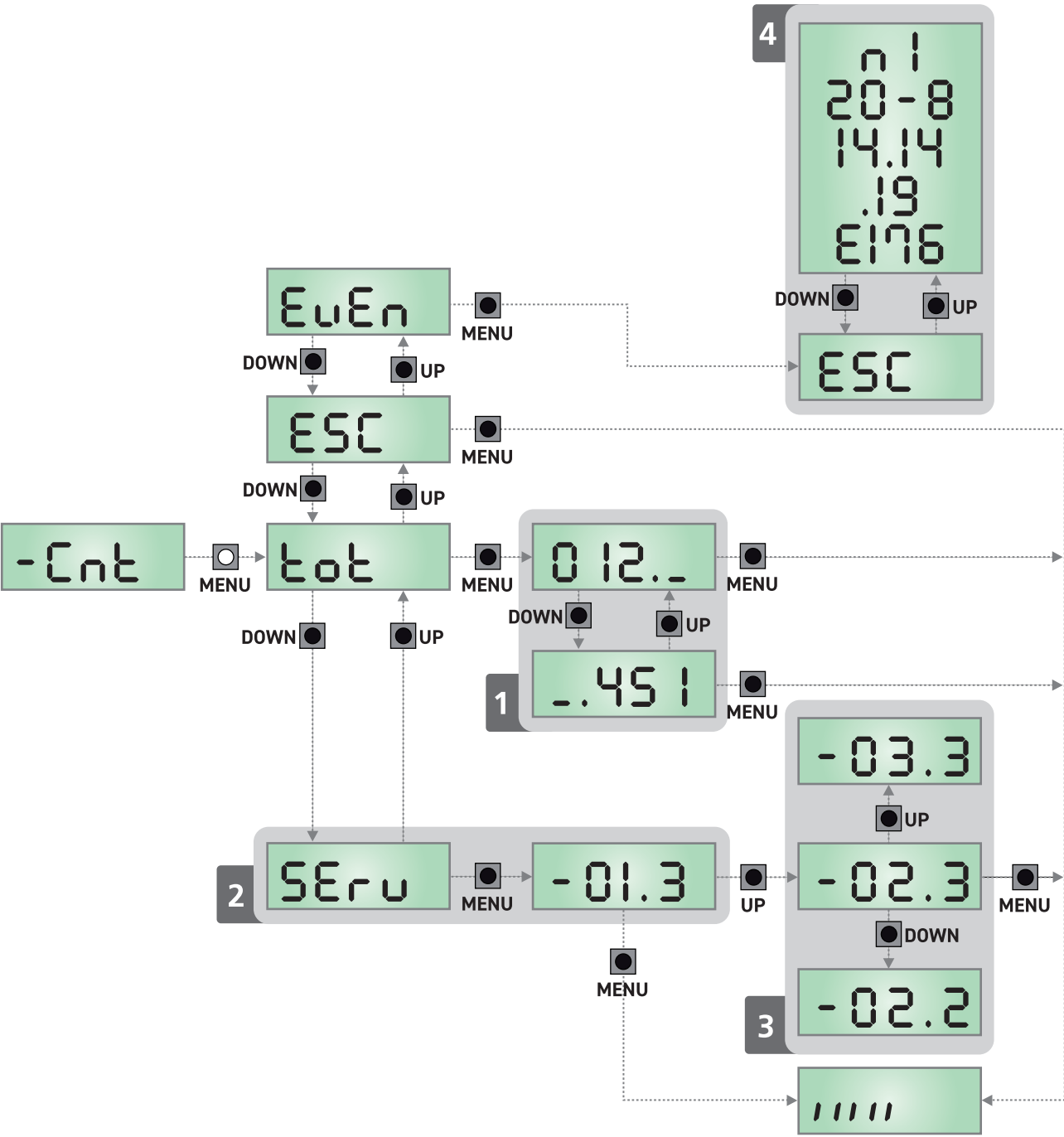
The first data is an index that allows you to identify the event: n 1 is the last recorded event, n 2 is the previous one and so on.

The other data are displayed automatically in succession and report the date/time information (each data remains displayed for about a second, if you want to temporarily stop the display, hold down the MENU button); the last data displayed is the event code (in some cases, an additional data is displayed after the event code), then the sequence starts again from the index.

The data is displayed for 1 minute after which the display returns to normal display.

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

EVENTS TABLE



17 - PROGRAMMING THE CONTROL UNIT

The configuration menu **-PrG** 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.

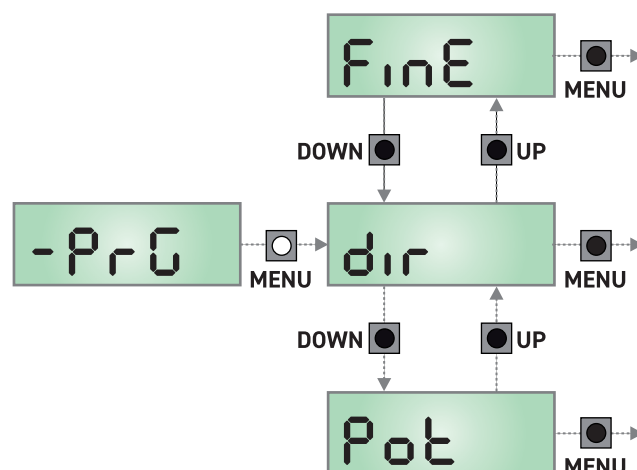
The last menu item (**FinE**) allows storing the carried out changes and going back to the control unit normal operation.

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.

By holding down the **UP** or **DOWN** keys, configuration menu items will scroll fast, until item **FinE** is viewed.

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



PARAMETER	VALUE	DESCRIPTION	DEFAULT
dir		Motor direction	d][
	nor	Direction of the rotation of the standard motor for traditional garage doors	
	rEu	It reverses the direction of rotation of the motor	
Pot		Motor power	51
	30 - 100	The displayed value is the percentage of max. motor power	
SPun		Start off When the door is standstill and it begins moving, the initial inertia must be faced, therefore, if your door is quite heavy, it could not move. In case the SPUNTO (pickup) function is activated, for the first 2 seconds of motion of each door, the control unit will ignore Potvalue and it will give motor the maximum power command in order to overcome the door inertia.	no
	no	Function deactivated	
	51	Function activated	
rAm		Starting ramp	3
	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.	
SEnS		Obstacle sensor	5
	0 - 10	This menu allows you to adjust the sensitivity of the sensor that detects the presence of an obstacle to the movement of the door. If set to no, the obstacle is not detected.	

PARAMETER	VALUE	DESCRIPTION	DEFAULT
Slr.AP		Slowdown time in opening	10.0"
	no	Function disabled	
	0,5"-1'00	Duration of the slowdown phase at the end of the opening maneuver (see chapter 11)	
Slr.Ch		Slowdown time in closing	10.0"
	no	Function disabled	
	0,5"-1'00	Duration of the slowdown phase at the end of the closing maneuver (see chapter 11)	
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	The door stops and goes to pause	
	Chiu	The door immediately starts closing	
	no	The door 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	The door stops and its cycle is considered as finished	
	APEr	The door opens again	
St.PR		Start in pause	Chiu
	PAUS	The pause time countdown is reset	
	Chiu	The door starts to close	
	no	The command is ignored	
Ch.AU		Automatic closing	no
	no	Function deactivated	
	0.5" - 20.0'	The door closes after the setup time	
Ch.Er		Closure after passage 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.AU is generally used	no
	no	Function deactivated	
	0.5" - 20.0'	The gate recloses after the set time (adjustable time from 0,5" to 20.0')	
PR.Er		Pause after transit In order to let the door open for the shortest possible time, it is possible to stop the door once the passage before the photocells is detected. If the automatic working is enabled, the time of the pause is Ch.Er .	
	no	Function deactivated	
	Si	Function activated	

PARAMETER	VALUE	DESCRIPTION	DEFAULT
LUC _i		Courtesy lights This menu allows you to set the courtesy lights to operate automatically when the door is opened.	E.LUC
	CiCL	Lights on for the entire duration of the cycle plus a time settable from 0 to 20.0'	
	E.LUC	Switch on with the activation command, for a time settable from 0 to 20.0'	
	no	Function disabled	
AUS		Auxiliary channel This menu allows you to set the operation of the courtesy light relay via a remote control stored on channel 4 of the receiver.	Mon
	EiM	The relay remains active for a time settable from 0 to 20.0'	
	biSt	The relay switches upon receiving each command on channel 4	
	Mon	The relay remains active as long as the receiver detects the remote control signal	
SPiR		Low voltage light output setting	FLSh
	FLSh	Flashing function (fixed frequency)	
	no	Function disabled	
	W.L.	Indicator light function: indicates the door status in real time, the type of flashing indicates the four possible conditions: - DOOR CLOSED the light is off - DOOR PAUSED the light is on fixed NOTE: if the ENERGY SAVING function is enabled and automatic closing is not active, the light remains off - DOOR OPENING the light flashes slowly (2Hz) - DOOR CLOSING the light flashes quickly (4Hz)	
r.LUC		Delayed switch-off of the integrated light at the end of the cycle	20.0"
	0.5" - 20.0'	The light switches off after the set time	
StEt		Activation inputs function This menu allows selecting input operation modes (see chapter 4.4)	StAn
	StAn	Standard mode	
	no	Start inputs from terminal board are disabled. Radio inputs operate in standard mode StAn	
	in.oU	A command on the START1 input or on CHANNEL 1 of the receiver commands the opening of the barrier and the switching on of the green traffic light at entry. A command on the START2 input or on CHANNEL 2 of the receiver commands the opening of the barrier and the switching on of the green exit light	
	St.Pr	Start + presence detector or magnetic loop	
	St.Fi	Start + fire sensor	
	AP.Ch	Open/Close command	
	d.MA	Manned operation	
	or oL	Timer mode	

PARAMETER	VALUE	DESCRIPTION	DEFAULT
Foto		Photocell input	
	no	Input disabled (ignored by the control unit)	
	CFCh	Input enabled even at standstill door too: the opening movement does not start if photocell is interrupted	
	Ch	Input enabled for the closing phase only WARNING: if you select this option, you must disable photocell test.	
Ft.tE		Photocell test	
	no	Function disabled	no
	Si	To ensure greater safety for the user, the control unit runs a functional test on the photocells before the start of each cycle. If there are no functional anomalies, the door moves, otherwise it remains still and the integrated light flashes for 5 seconds.	
ShAd		Photocell shadow zone In some installations, it may happen that the door passes in front of the photocells, interrupting their beam. In this case, the door could not complete the closing maneuver. With this function, it is possible to temporarily disable the photocells, in order to allow the door to pass. The path of the door during which the photocells are not active is measured as a percentage of the travel between points 0 (door closed) and 100 (door open). The limits of the shadow zone are set automatically by performing the ShAd or SMA type learning (chapter 14); if the limits set by the procedure are not correct, it is possible to modify them manually by editing the parameters i.ShA and F.ShA . WARNING: Improper use of this function may compromise the safety of the door. It is recommended to use this function only in cases where it is unavoidable for the door to pass in front of the photocells and to set the limits of the shadow zone as narrow as possible, compatibly with the margins necessary to compensate for possible differences in door speed.	no
	no	Function disabled	
	F.ShA	End position of shadow zone	
	i.ShA	Initial position of shadow zone	
SiC		Safety input This menu allows you to enable the safety input and set its operation (chapter 8.6)	no
	no	Input disabled (the control unit ignores it)	
	StoP	Input enabled for a stop button with normally closed contact	
	EdGE	Input enabled for a conductive rubber edge, active only in the closing phase	
	Ed.AP	Input enabled for a conductive rubber edge, active both in opening and closing	
FL.En		Limit switch inputs The actuator is equipped with two cams that activate two microswitches to allow the detection of the end of the door stroke (chapter 11).	no
	no	Disabled inputs (the control unit ignores them)	
	StoP	Cams indicate the point where the door must stop	
	nERr	Cams indicate that the door has almost reached the point where it must stop	

PARAMETER	VALUE	DESCRIPTION	DEFAULT
rLR		Motor release on mechanical stop When the door stops on the mechanical stop the motor is commanded for a fraction of a second in the opposite direction, loosening the tension of the motor gears	0
	0 - 10	Adjustable function from 0 to 10	
ASM		Anti-skid When the door reverses its movement during travel, it typically takes longer to reach the limit switch than the duration of the interrupted manoeuvre, to compensate for the inertia during the reversal phase (chapter 11)	no
	no	Function disabled, the duration of the retraction maneuver is equal to a full stroke	
	0.5" - 1.00'	Added time to compensate for slippage	
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	End of programming	