



CARDIN ELETTRONICA spa
Via del lavoro, 73 – Z.I. Cimavilla
31013 Codognè (TV) Italy
Tel: +39/0438.404011
Fax: +39/0438.401831
email (Italian): Sales.office.it@cardin.it
email (Europe): Sales.office@cardin.it
Http: www.cardin.it

SL
24Vdc
Motors

Instruction manual	Series	Model	Date
ZVL716.00	SL	624/624CB	20-07-2021

Questo prodotto è stato testato e collaudato nei laboratori della casa costruttrice, la quale ne ha verificato la perfetta corrispondenza delle caratteristiche con quelle richieste dalla normativa vigente. This product has been tried and tested in the manufacturer's laboratory who have verified that the product conforms in every aspect to the safety standards in force. Ce produit a été testé et essayé dans les laboratoires du fabricant. Pour l'installer suivre attentivement les instructions fournies. Dieses Produkt wurde in den Werkstätten der Herstellerfirma auf die perfekte Übereinstimmung ihrer Eigenschaften mit den von den geltenden Normen vorgeschriebenen getestet und geprüft. Este producto ha sido probado y ensayado en los laboratorios del fabricante, que ha comprobado la perfecta correspondencia de sus características con las contempladas por la normativa vigente.

AUTOMAZIONE PER CANCELLI SCORREVOLI CON MOTORE IN CORRENTE CONTINUA AUTOMATION FOR SLIDING GATES WITH A DC POWERED MOTOR AUTOMATISME POUR PORTAILS COULISSANTS AVEC MOTEUR À COURANT CONTINU SCHIEBETORANTRIEBE MIT GLEICHSTROMMOTOR AUTOMATIZACIÓN PARA CANCELLAS CORREDERAS CON MOTOR DE CORRIENTE CONTINUA

24 Vdc Motors SLX624 (V0.32)



FRANÇAIS



ATTENTION! Avant de commencer la pose, lire attentivement les instructions!

Exemple d'installation	Pages	3-4
Schéma électrique de l'exemple d'installation	Page	5
Consignes importantes	Page	22
Instructions pour l'installation	Pages	23-24
Manoeuvre manuelle	Page	24
Branchement électrique	Pages	24-25
Procédé de programmation	Page	26-28
Repositionnement automatique	Page	28
Commande par radio	Page	28
Modes de fonctionnement	Pages	29
Fonctionnement de à batterie	Page	29
Caractéristiques techniques	Page	48

ITALIANO



ATTENZIONE! Prima di iniziare l'installazione leggere le istruzioni attentamente!

Verifiche preliminari/Impianto tipo	Pagine	3-4
Schema elettrico impianto tipo	Pagina	5
Avvertenze importanti	Pagina	6
Istruzioni per l'installazione	Pagine	7-8
Sblocco manuale	Pagina	8
Collegamento elettrico	Pagine	8-9
Procedura di programmazione	Pagina	10-12
Riposizionamento automatico	Pagina	12
Comando via radio	Pagina	12
Modalità di funzionamento	Pagine	13
Funzionamento a batteria	Pagina	13
Caratteristiche tecniche	Pagina	48

ENGLISH



ATTENTION! Before installing this device read the following instructions carefully!

Installation example	Pages	3-4
Standard wiring diagram	Page	5
Important remarks	Page	14
Installation instructions	Pages	15-16
Manual release mechanism	Page	16
Electrical connection	Pages	16-17
Programming procedure	Page	18-20
Automatic repositioning	Page	20
Remote control	Page	20
Function modes	Pages	21
Battery powered operation	Page	21
Technical specifications	Page	48

DEUTSCH



ACHTUNG! Bevor mit der Installation begonnen wird, sollte die Anleitung aufmerksam gelesen werden.

Anlagenart	Seiten	3-4
Elektrischer Schaltplan Anlagenart	Seite	5
Wichtige Hinweise	Seite	30
Installationsanleitung	Seiten	31-32
Manuelle Betätigung	Seite	32
Elektrischer Anschluss	Seiten	32-33
Programmiersverfahren	Seite	34-36
Automatische Rückstellung	Seite	36
Fernbedienung	Seite	36
Funktionsart	Seiten	37
Batteriebetrieb	Seite	37
Technische Eigenschaften	Seite	48

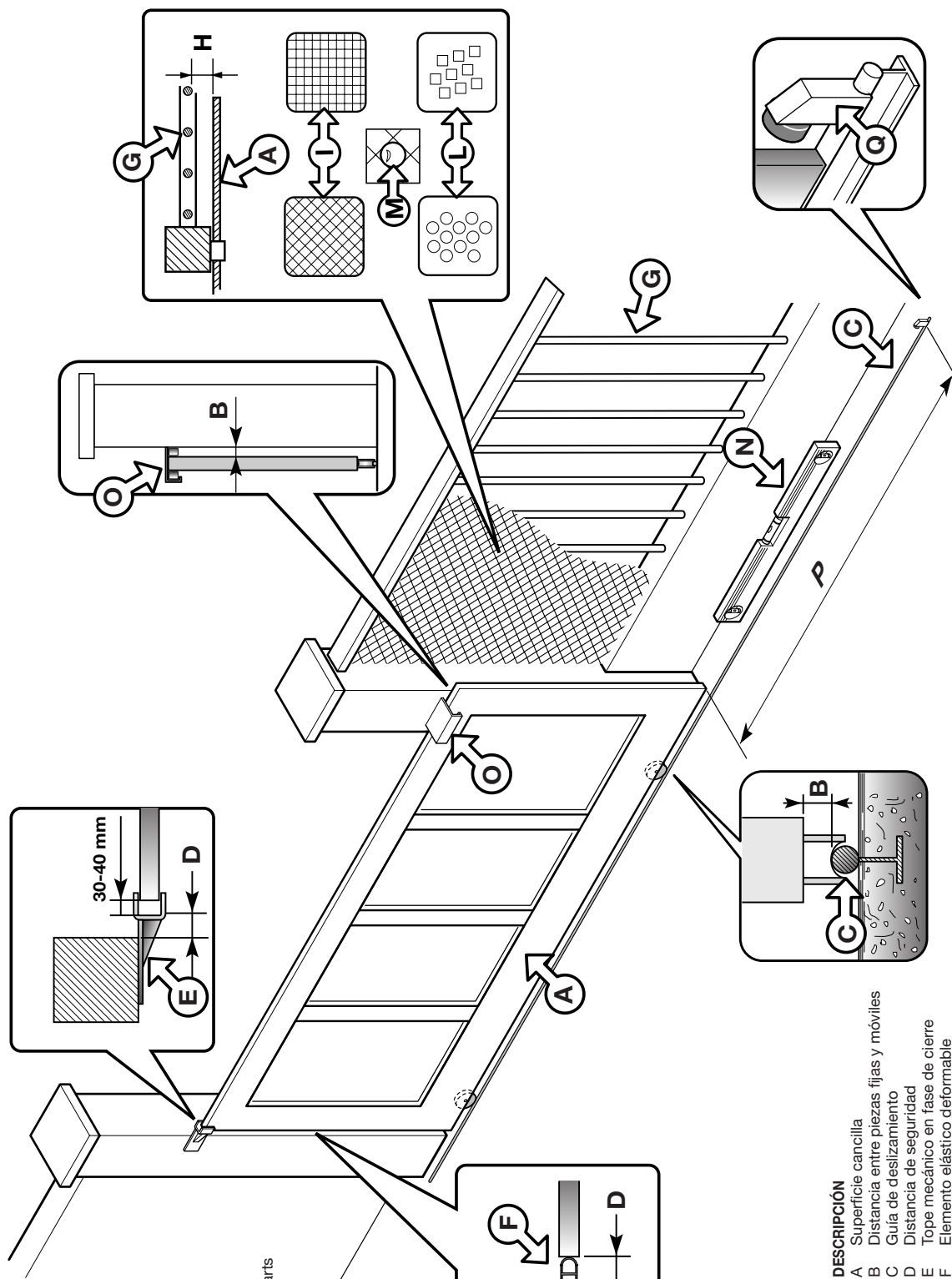
ESPAÑOL



¡ATENCIÓN! Antes de iniciar la instalación del sistema, leer atentamente las instrucciones.

Instalación estándar	Páginas	3-4
Esquema eléctrico instalación estándar	Página	5
Advertencias importantes	Página	38
Instrucciones para la instalación	Páginas	39-40
Maniobra manual	Página	40
Conexiónado eléctrico	Páginas	40-41
Procedimiento para la programación	Página	42-44
Reposicionamiento automático	Página	44
Mando vía radio	Página	44
Modalidad de funcionamiento	Páginas	45
Funcionamiento por batería	Página	45
Características técnica	Página	48

1



LEGENDA

- A Superficie anta cancello
- B Distanza tra parti fisse e mobili
- C Guida di scorrimento
- D Distanza di sicurezza
- E Arresto meccanico in chiusura
- F Elemento elastico deformabile
- G Recinzione
- H Distanza tra recinzione e cancello
- I Rete o griglia
- L Traforato metallico
- M Sfera di prova passaggio
- N Livella a bolla
- O Pattini o rulli guida
- P Corsa cancello
- Q Arresto meccanico in apertura

LEGEND

- A Gate surface
- B Distance between the fixed part and the moving parts
- C Castor guide
- D Safety distance
- E Closing mechanical travel limit
- F Rubber anticrush buffer
- G Fencing
- H Distance between the fence and the gate
- I Wire mesh
- L Punched metal plate
- M Test sphere
- N Spirit level
- O Runner guide
- P Gate travel distance
- Q Opening mechanical travel limit

NOMENCLATURE

- A Surface vantail du portail
- B Distance entre parties fixes et mobiles
- C Rail de guidage
- D Distance de sécurité
- E Butée en fermeture
- F Élément élastique déformable
- G Clôture
- H Distance entre clôture et portail
- I Grillage ou grille
- L Panneau métallique perforé
- M Bille d'essai de passage
- N Niveau à bulle
- O Patins ou galets de guidage
- P Course portail
- Q Butée en ouverture

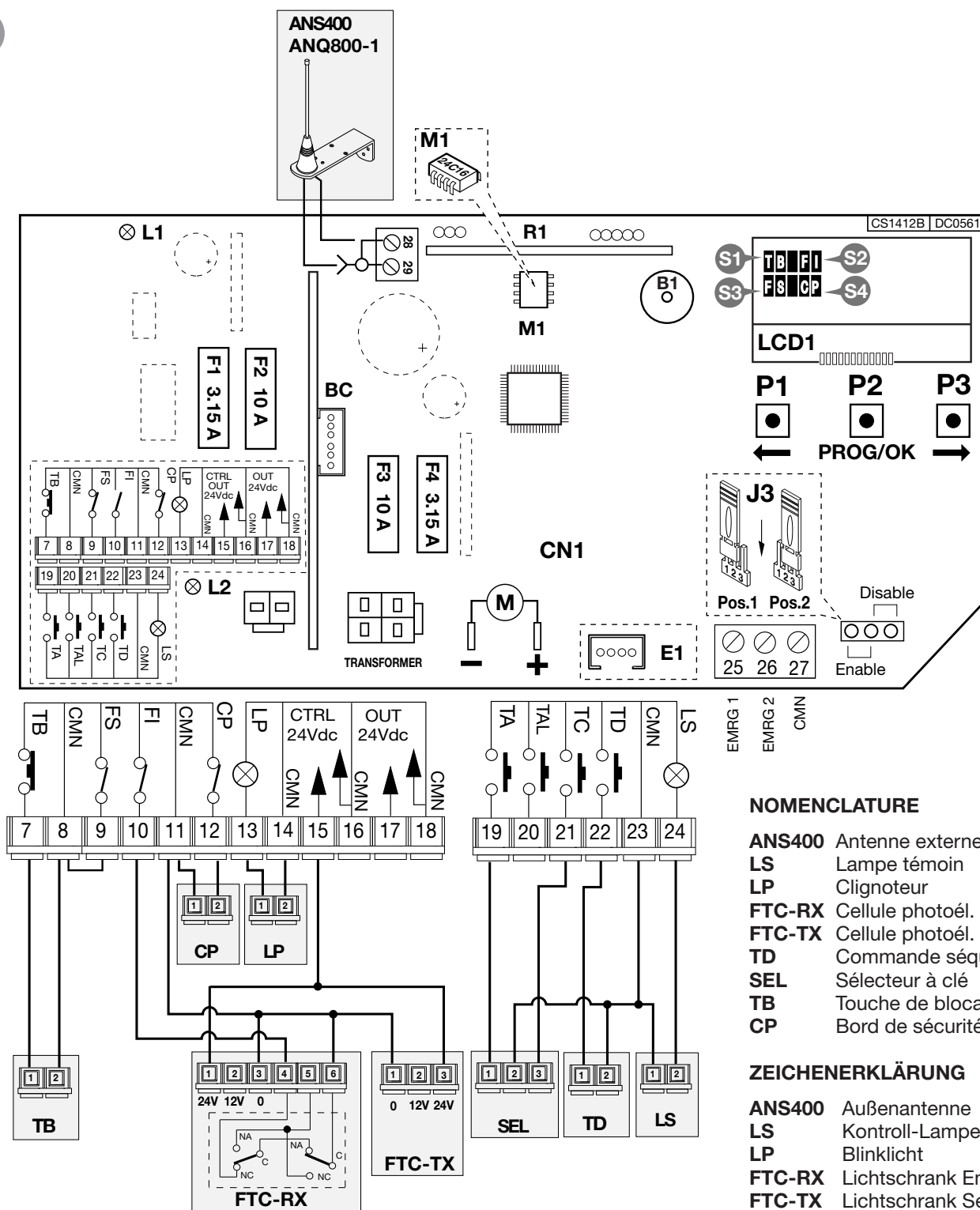
ZEICHENERKLÄRUNG

- A Torflügeloberfläche
- B Abstand zwischen festen und beweglichen Teilen
- C Gleitschiene
- D Sicherheitsabstand
- E mechanischer Anschlag bei Schließung
- F Verformbares elastisches Element
- G Gitter
- H Abstand zwischen Gitter und Torflügel
- I Drahtgeflecht oder Gitterwerk
- L Lochblech
- M Prüfkugel
- N Wasservwaage
- O Gleitschuhe oder Führungsrollen
- P Torflügelauftrecke
- Q Mechanischer Endanschlag bei Öffnung

DESCRIPCIÓN

- A Superficie cancella
- B Distancia entre piezas fijas y móviles
- C Guía de deslizamiento
- D Distancia de seguridad
- E Tope mecánico en fase de cierre
- F Elemento elástico deformable
- G Cercado
- H Distancia entre cercado y cancella
- I Red de alambre o verja
- L Elemento metálico agujereado
- M Bola de prueba paso
- N Nivel de burbuja
- O Patines o rodillos de guía
- P Carrera cancella
- Q Tope mecánico en fase de apertura

3



NOMENCLATURE

ANS400	Antenne externe
LS	Lampe témoin
LP	Clignoteur
FTC-RX	Cellule photoél. récepteur
FTC-TX	Cellule photoél. émetteur
TD	Commande séquentielle
SEL	Sélecteur à clé
TB	Touche de blocage
CP	Bord de sécurité

ZEICHENERKLÄRUNG

ANS400	Außenantenne
LS	Kontroll-Lampe
LP	Blinklicht
FTC-RX	Lichtschrank Empfänger
FTC-TX	Lichtschrank Sender
TD	Taste sequentieller Befehl
SEL	Schlüsselwahlschalter
TB	Blockiertaste
CP	Kontaktleiste

LEGENDA

ANS400	Antenna esterna
LS	Lampada spia
LP	Lampeggiatore
FTC-RX	Fotocellula ricevitore
FTC-TX	Fotocellula trasmettitore
TD	Tasto dinamico
SEL	Selettore a chiave
TB	Tasto di blocco
CP	Costa sensibile

LEGEND

ANS400	External antenna
LS	Indicator light
LP	Flashing warning lights
FTC-RX	Photocell receiver
FTC-TX	Photocell transmitter
TD	Dynamic button (sequential)
SEL	Selector switch
TB	Blocking button
CP	Safety edge

LEYENDA

ANS400	Antena exterior
LS	Luz testigo
LP	Relampagueador
FTC-RX	Fotocélula receptor
FTC-TX	Fotocélula emisor
TD	Tecla di control secuencial
SEL	Selector de llave
TB	Tecla de bloqueo
CP	Banda sensible

IMPORTANT REMARKS



READ THE FOLLOWING REMARKS CAREFULLY AND PAY PARTICULAR ATTENTION TO ALL THE PARAGRAPHS MARKED WITH THE SYMBOL . NOT READING THESE IMPORTANT INSTRUCTIONS COULD COMPROMISE THE CORRECT WORKING ORDER OF THE SYSTEM AND CREATE DANGER SITUATIONS FOR THE USERS OF THE SYSTEM. KEEP THESE INSTRUCTIONS FOR FUTURE USE.



- These instructions are aimed at professionally qualified **"INSTALLERS OF ELECTRICAL EQUIPMENT"** and must respect the local standards and regulations in force. All materials used must be approved and must suit the environment in which the installation is situated.
- All maintenance operations must be carried out by professionally qualified technicians.
- This appliance must be used exclusively for the purpose for which it has been made. **"i.e. for the automation of sliding gates"** with weights of up to **600 kg** and a maximum travel distance of **12 m**.
- The geared motor can be positioned either to the **left** or to the **right** of the passageway. Any non authorised modifications are to be considered improper and therefore dangerous.



Caution! The installation of both anti-derailment buffers is absolutely obligatory.



IMPORTANT SAFETY INSTRUCTIONS

It is the responsibility of the installer to make sure that the following public safety conditions are satisfied:

- 1) Ensure that the gate operating installation is far enough away from the main road to eliminate possible traffic disruptions and that the size of the gate, the distance from the road and the work cycle speed can in no way interfere, causing possible traffic hazards.
 - 2) The motor must be installed on the inside of the property and not on the public side of the gate. The gates must not open onto a public area.
 - 3) Manual control switches (including the emergency manoeuvring buttons EMRG1 and EMRG2) must be installed at a height of between **1,5** and **1,8 m**, near enough to the part that is being guided to be within sight of the operator but far enough away to be safe from the moving components and in a location not accessible to children. Controls installed externally must also be protected by a safety device inhibiting unauthorised use.
 - 4) At least two warning signs (similar to the example on the right) should be placed, where they can be easily seen by the public, in the area of the system of automatic operation. One inside the property and one on the public side of the installation. These signs must be indelible and not hidden by any objects (such as tree branches, decorative fencing etc.). If the automation is only to be used for the passage of vehicles this should be indicated by the presence of two warning signs forbidding the passage of pedestrians (one inside and one outside the gate). Make sure that the end-user is aware that children and/or pets must not be allowed to play within the area of a gate installation. If possible include this in the warning signs
 - 5) The gate operator is designed for use on gates through which vehicles are passing and may not be fitted with a pedestrian entrance unless it is fitted with controls for the pedestrian entrance.
 - 6) This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning the use of the appliance by a person responsible for their safety.
 - 7) A correct earth connection is fundamental in order to guarantee the electrical safety of the machine
 - 8) Before carrying out any cleaning or maintenance operations make sure the power is disconnected at the mains, the motor power cables are disconnected and the batteries have been disconnected.
 - 9) If you have any questions about the safety of the gate operating system, do not install the operator. Contact your dealer for assistance.
- In order to respect the requirements of the standard **EN 12453** (dynamic impact force limitation) make sure the current sensor is set to **SNS1**.



Attention! If you use a rubber safety edge (at least **3 cm** high) this is obligatory in order to conform to the standard. If you can't respect the limits, increase the size of the safety edge or change the type of edge used.

- You are still obliged to check the impact force using the relative instrument.

TECHNICAL DESCRIPTION

- Mains power supply **230 Vac**.
- Motor powered with a maximum voltage of **38 Vdc**.
- The reduction unit stator is made of die cast aluminium and contains worm gear and a helicoidal crown wheel made of thermoplastic lubricated with permanently fluid grease.
- The incorporated electronic programmer contains the power stage, the logic control and the radio receiver decoding module. The power supply is routed to the electronics card via a separate transformer which is housed in the same container.
- Cover in shockproof plastic.

IMPORTANT REMARKS

Accessories

CRENY

- Rack (**20 mm x 30 mm**) in glass fibre with upper fastening slits (**1 m**).

CRENY1

- Rack (**20 mm x 30 mm**) in glass fibre with lower fastening slits (**1 m**).

SLOAC

- Rack in galvanised steel (**22 mm x 22 mm**) **2 m** to be welded.

SLOAC2

- Rack in galvanised steel (**12 mm x 30 mm**) **1 m** with fastening slits.

XLBS

- Contact safety edge available in lengths of: **1,5** and **3,0 m** maximum height **70 mm**.

USER INSTRUCTIONS



Attention! Only for EU customers - **WEEE** marking.

This symbol indicates that once the products life-span has expired it must be disposed of separately from other rubbish. The user is therefore obliged to either take the product to a suitable differential collection site for electronic and electrical goods or to send it back to the manufacturer if the intention is to replace it with a new equivalent version of the same product.

Suitable differential collection, environmental friendly treatment and disposal contributes to avoiding negative effects on the ambient and consequently health as well as favouring the recycling of materials.

Illicitly disposing of this product by the owner is punishable by law and will be dealt with according to the laws and standards of the individual member nation.

During the opening/closing manoeuvre check for correct operation and activate the emergency stop button in case of danger. During normal operation wait for the gate to open completely before crossing it.

During blackouts with a flat battery the gate can be released and manually manoeuvred using the supplied release key (see manual release fig. 8). Periodically check the moving parts for wear and tear and grease if required, using lubricants which maintain their friction levels unaltered throughout time and are suitable for temperatures of **-20 to +70°C**.

Eventual repair work must be carried out by specialised personnel using original spare parts. The appliance is not suitable for continuous operation and may only be operated using a duty cycle of **70%**.

PRELIMINARY CHECKS (fig. 1, page 2)

Before starting the installation make sure that the structure which is to be automated is in good working order and respects the local standards and regulations in force.

To this end ensure that:

- The surface of the sliding gate **"A"** is smooth and has no protrusions up to a distance of **2.5 m** from ground level. Protrusions on the gate surface which are not greater than **3 mm** and have rounded edges are acceptable.
- If the surface of the gate is not smooth, the entire height up to **2.5 m** from the ground must be protected by two of the following devices:

a) photoelectric cells

b) contact safety buffer

- the distance **"B"** between the fixed parts and sliding parts of the installation must not exceed **15 mm**.
- the runner guide **"C"**, preferably round, should be securely fixed to the ground, completely exposed and free of any imperfections which could inhibit the correct movement of the gate.
- when the gate is closed a space of **50 mm** **"D"** must remain for the entire height of the front part of the gate and a mechanical travel limit **"E"** must be positioned on the upper part of the gate.
- The free space **"D"** can be covered with a rubber anti-crush buffer **"F"** or better still a pneumatic or photoelectric contact safety buffer.
- if the gate slides past a fixed structure **"G"** which has railings or bars leaving open spaces, it must be protected in one of the following ways:
 1. distance **"H"** greater than **500 mm**: no protection required;
 2. distance **"H"** between **500** and **300 mm**: wire mesh fencing **"I"** or punched metal plating **"L"** with an opening which does not allow the passage of a **25 mm** diameter sphere **"M"** must be fitted;

3. distance "H" smaller than **300 mm**: wire mesh fencing "I" or punched metal plating "L" with an opening which does not allow the passage of a **12 mm** diameter sphere "M" must be fitted.

The wires of the mesh "I" must not have a cross-section of less than **2,5 mm²** and the punched metal plating "L" must not have a thickness of less than **1.2 mm**.

Protection is not necessary for the area "P" if the fixed structure with railings or bars is over **2.5 m** above the ground.

- check the gate components, replace any worn or damaged parts and then lubricate them.
- using a spirit level "**N**" check that the castor guide is in square.
- the upper runner guide "**O**" must have the correct play for the gate and must not inhibit the gate's sliding action.
- check that a mechanical travel limit "**Q**" (absolutely necessary) has been fitted in the opening direction and that it corresponds to the maximum travel distance "**P**" of the gate.

The travel limit must guarantee anti-derailment and gate stability.



Warning! It is the installer's responsibility to check all critical danger points, to take action and to install any devices needed to guarantee the safety of all people using the gate (risk analysis).

INSTALLATION INSTRUCTIONS

- The geared motor can be positioned either to the left or to the right of the passageway. **Important:** read the paragraph "**INSTRUCTIONS FOR POSITIONING THE UNIT**".

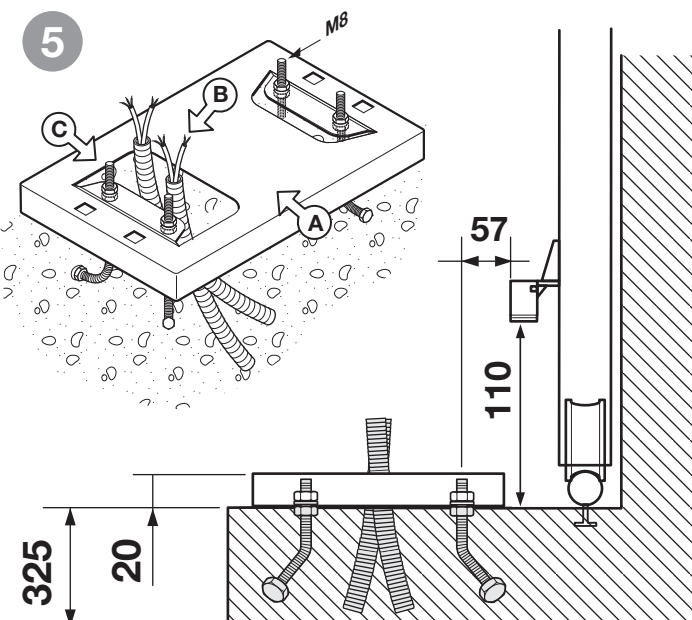
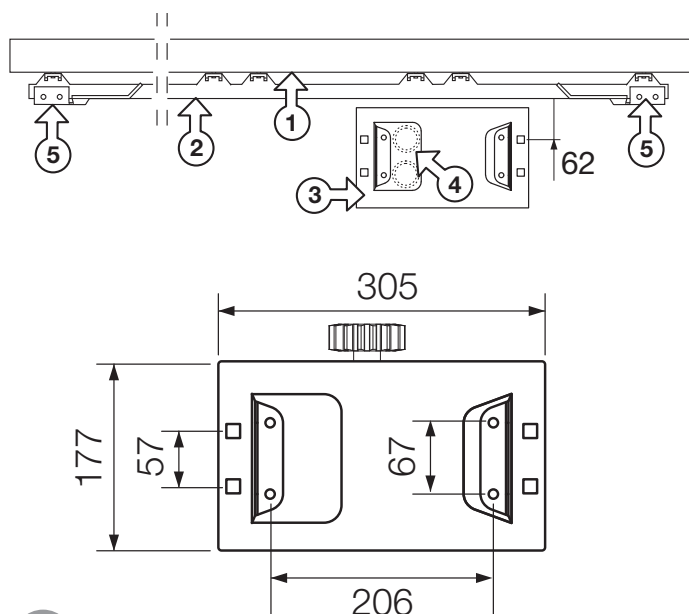
Anchoring the unit (fig. 4, 5, 6)

Important! Check the exact anchoring position with respect to the alignment of the sliding gate.

- Run the piping and connection wires to the position where the motor is to be installed (see fig. 2).
- Attach the anchor bolts to the base plate "**A**" allowing them to protrude by **20 mm** and then tighten down using the supplied **M8** nuts.
- Prepare a cement plinth, in the position where the motor is to be installed, with a depth of **325 mm**.
- Insert the base plate making sure that:
 - the electrical cables pass through the hole "**B**";
 - the anchor bolts "**C**" are immersed into the cement base and the base plate is perfectly level;
 - the four protruding threaded bolts are perpendicular to the base plate;
 - the surface area of the base plate is clean and free of cement residue.

If the runner guide already exists the cement base should be extended to take in part of the runner guide foundation.

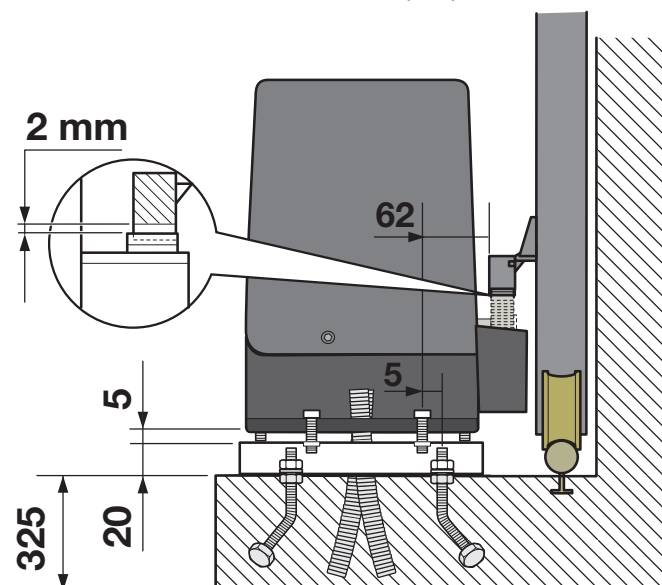
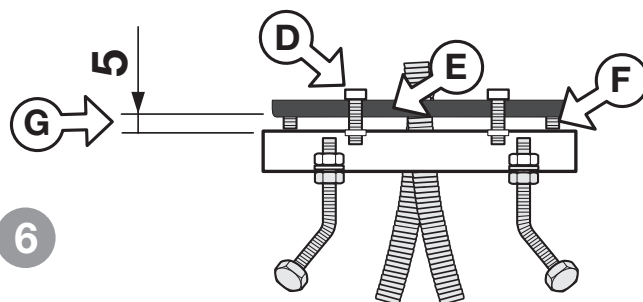
This will stop the two foundations from giving way separately.



- Place the geared motor on the base plate and insert the four bolts "**D**" into the oval slots "**E**" which will allow you to adjust the horizontal play if required.
Use the four grub screws "**F**" to correct the height and/or to adjust the horizontal level of the geared motor.



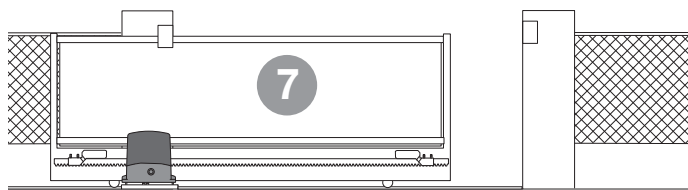
Attention! You must respect the distance of **5 mm** between the anchor plate and the base of the motor.



Fitting the toothed rack

- release the geared motor (fig. 8), lay the first stretch of the toothed rack on the pinion and fix it to the gate, then fasten down all the other parts along the entire length of the gate.
- after having fastened the toothed rack, realign the pinion (play of **1 to 2 mm** between the toothed runner and the pinion) using the positioning nuts at the base of the geared motor. This action will prevent the weight of the sliding gate from damaging the unit when working.

INSTRUCTIONS FOR POSITIONING THE UNIT

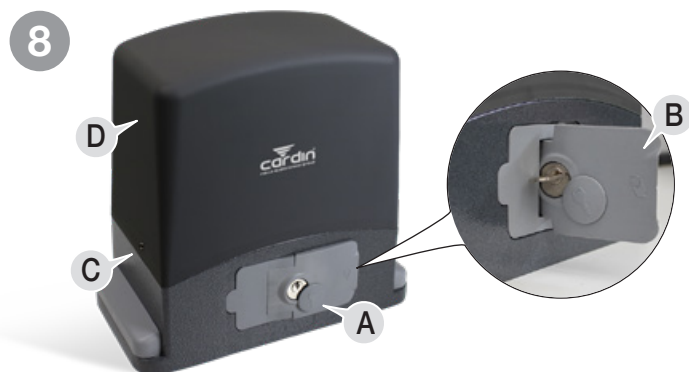


- The geared motor unit has been assembled in the factory to be fitted to the **LEFT SIDE** of the gate (internal view). To install the motor to the right set the installation parameter (see page 20).

MANUAL RELEASE MECHANISM

Caution! Never carry out the release/rearming procedure when the gate is moving.

To release the gate use the manual release key supplied with the unit. The key should be kept inside the house in an easily accessible place or stored with the unit itself.



To release the unit

Rotate the lock protection disc "A", insert the manual release key and rotate the key through **90 degrees** clockwise. Open the lever to about **90 degrees**. This will release the clutch and separate the gears from the motor allowing you to manually manoeuvre the gate by pushing lightly on it.

To relock the unit

Follow the above instructions in reverse order rotating the key through **90 degrees** anticlockwise. Close the release mechanism access disc "A".

- Attention!** Never use the manual release mechanism while the gate is in operation.
- Moving the gate manually** will force the encoder to lose the position of the gate. To reset the control, once the gate has been relocked, you will need to give 3 or more movement commands so that the gate leaf will reach the travel limit enough times to position itself correctly.

Access to the electronic card

To open the cover remove the two screws "C" using a posidrive screwdriver and slide off the cover "D".

- Caution!** Before opening the cover make sure that the power has been switched off at the mains.

ELECTRONIC PROGRAMMER

Electronic programmer for a **dc** motor with an incorporated radio receiver card, which allows the memorisation of **300/1000 user codes** (see "remote control" page 20). The product is fitted with a **433 MHz** RF module (**868 MHz** on request).

The motor rotation speed is electronically controlled, starting slowly and increasing in speed; the speed is reduced as it nears the travel limit so as to enable a controlled smooth stop.

Programming is carried out using the buttons **P1, P2, P3**, and allows you to set the system, the current sensor and the entire gate travel distance. The logic carries out position control using an encoder.

The intervention of the anticrush/antidrag sensor during the closing and opening stages causes travel direction inversion.

IMPORTANT REMARKS

- Warning!** In conformity with the electrical safety standards it is forbidden to connect binding posts **9** and **10** directly to a circuit that receives power greater than **30 Vac/dc**.

Warning! For the correct operation of the programmer the incorporated batteries must be in good condition.

The programmer will **lose the position of the gate** in case of blackouts when the batteries are flat the alarm will sound.

Check the good working order of the batteries every six months (see page 21 "**Battery check**").

- After having installed the device, **and before powering up the programmer**, release the door (manual release mechanism) and move it manually, checking that it moves smoothly and has no unusual points of resistance.

- The controlled load output (binding post 15) is aimed at reducing battery power consumption (if installed) during blackouts; photocells and other safety devices should be connected to this output.

- When a command is received, via radio or via wire, the electronic programmer routes voltage to the **CTRL 24 Vdc** output. It then evaluates the state of the safety devices and if they are at rest it will activate the motor.

- Connecting devices to the controlled output contact also allows you to carry out the autotest function (enabled using "TEST FI" and "TEST FS" in the "OPTIONS" menu) and check that the safety devices are functioning correctly.

- The presence of the electrical current sensor does not dispense with the obligation to install photoelectric cells and other safety devices foreseen by the **safety standards in force**.

- Before connecting the appliance make sure that the voltage and frequency rated on the data plate conform to those of the mains supply.

- For the **230 Vac** power supply only use a polychloroprene **2 x 1.5 mm² + ⊕** cable that conforms to the international standard 60245 IEC 57.

- The cable may only be replaced by qualified technicians.

- An all pole trip switch with at least 3 mm between the contacts must be installed between the unit and the mains supply.

- Don't use cables with aluminium conductors; don't solder the ends of cables which are to be inserted into the binding posts; use cables marked **T min 85°C** and resistant to atmospheric agents.

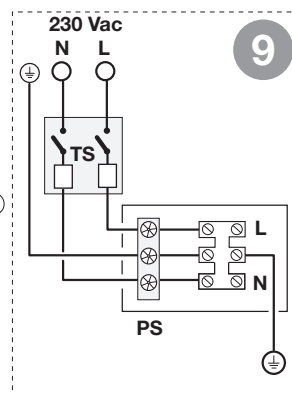
- The terminal wires must be positioned in such a way that both the wire and the insulating sheath are tightly fastened (a plastic jubilee clip is sufficient).

ELECTRICAL CONNECTION 230 Vac

- Connect the control and security device wires.

- Run the **230 Vac** mains power supply through the trip switch "TS" and the through the rubber cable clamp "PS" to the terminal board:

- connect the **neutral** to binding post **N**
- connect the **earth** to binding post **⊕**
- connect the **live** to binding post **L**



Terminal board connection

- 7 **TB** (N.C./8.2 k Ω) stop button input (The opening of this contact interrupts the cycle until a new movement command is given).
- 8 **CMN** common for all inputs and outputs.
- 9 **FS** (N.C./8.2 k Ω) safety and control devices in input (stop photoelectric cells). The opening of this contact will block all movement, until the obstruction has been removed, due to the safety device cutting in, the gate will then continue moving until it reaches a travel limit (only in the automatic mode).
- 10 **FI** (N.C./8.2 k Ω) safety and control devices in input (photocells invert the travel direction when an obstruction is detected). Opening this contact will provoke a travel direction inversion during closure due to the cutting in of the safety device.
- 11 **CMN** common for all inputs and outputs.
- 12 **CP** (N.C./8.2 k Ω) safety buffer input. Opening this contact will provoke a travel direction inversion of **5 cm**, a pause of **3 minutes**, after which the motor will continue moving in the original direction after a **10 second** preflashing period has elapsed.
- 13 **LP 24 Vdc** output for warning lights. **25 W** intermittent activation (50%), **12,5 W** continuous activation.
- 14 **CMN** common for all inputs and outputs.
- 15 **24 Vdc** output, powering controlled external loads⁽¹⁾.
- 16 **CMN** common for all inputs and outputs.
- 17 **24 Vdc** output, powering permanent external loads⁽¹⁾.
- 18 **CMN** common for all inputs and outputs.
- 19 **TA** (NO contact) opening button input.
- 20 **TAL** (NO contact) limited opening button input.
- 21 **TC** (NO contact) closing button input.
- 22 **TD** (NO contact) dynamic button input.
- 23 **CMN** Common for all inputs and outputs.
- 24 **LS 24 Vdc, 3W** indicator light output.
- 25 **EMRG 1** (NO contact) emergency manoeuvring button input 1
- 26 **EMRG 2** (NO contact) emergency manoeuvring button input 2
- 27 Common for both emergency buttons.
- 28 Outer conductor for the radio receiver antenna
- 29 Inner conductor for the radio receiver antenna (if an external antenna

is fitted use a coaxial type cable **RG58** with an impedance of **50 Ω**).

Note⁽¹⁾ The total of the 2 external device outputs must not exceed **10W**.

ALL UNUSED NC CONTACTS MUST BE JUMPED and consequently the security device test must also be deactivated (**FI**, **FS**).

If you want to activate the **FI**, **FS** test both the transmission and receiver parts of the security devices must be connected to the binding post marked **"CTRL 30 Vdc"**.

If the test is active there will be a 1 second delay between the command transmission and movement of the gate.

Switch on the power and make sure that the indicator LEDs are indicating the following conditions:

- L1	Power on	ON
- L2	Wrong battery connection	OFF ⁽³⁾
- S1	Indicator for the blocking button "TB"	ON ⁽⁴⁾
- S2	Indicator for the inverting photoelectric cells "FI"	ON ⁽⁴⁾
- S3	Indicator for the stop photoelectric cells "FS"	ON ⁽⁴⁾
- S4	Indicator for the safety edge "CP"	ON ⁽⁴⁾
- S5	Indicator for the opening button (TA)	OFF
- S6	Indicator for the closing button (TC)	OFF
- S7	Indicator for the limited opening button (TAL)	OFF
- S8	Indicator for the sequential command (TD/CH1)	OFF

Note⁽³⁾ If this LED is "ON" invert the battery power cables immediately.

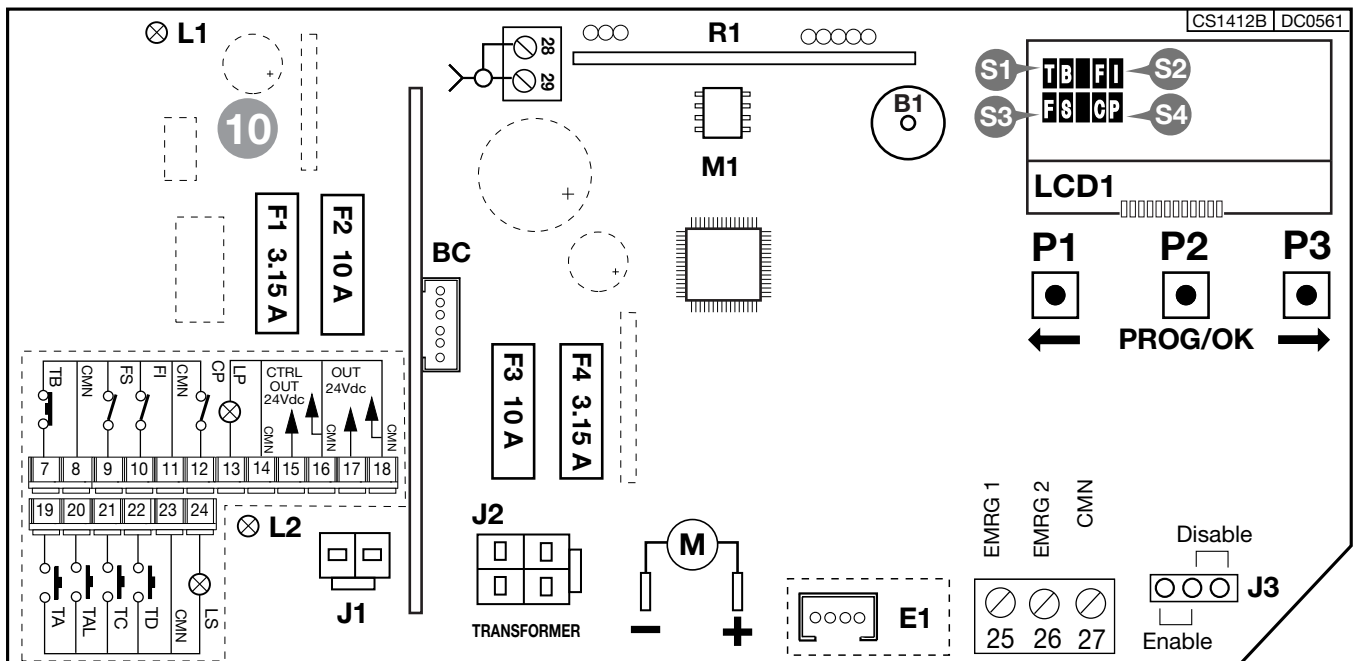
Note⁽⁴⁾ These indications are "ON" if the relative security devices are inactive.

Check that the activation of the safety devices makes the corresponding indicator lights flash. A flashing LED indicates an alarm status.

If the **green power on LED "L1" doesn't light up** check the condition of the fuses and the power cable connection at the transformer primary.

If **one or more of the safety LEDs "S1, S2, S3, S4" flash** check the contacts of the relative security devices and check that the unused safety device contacts have been bridged.

The indications **"S5, S6, S7, S8"** appear on the display when the relative command is activated, eg. pressing the button **"TA"** will force **"TA"** to appear on the display.



B1 Signal buzzer "via radio" mode

BC Battery charger card

LCD1 Display

F1 3.1 A rapid fuse (24V battery powered operation protection)

F2 10 A rapid fuse (battery powered operation motor protection)

F3 10 A rapid fuse (motor power protection from transformer)

F4 3.1 A rapid fuse (24V transformer power protection)

J1 Battery connection

J2 Transformer secondary connection

J3 Emergency enable jumper

M1 Transmitter code memory module

P1 Menu navigation button (←)

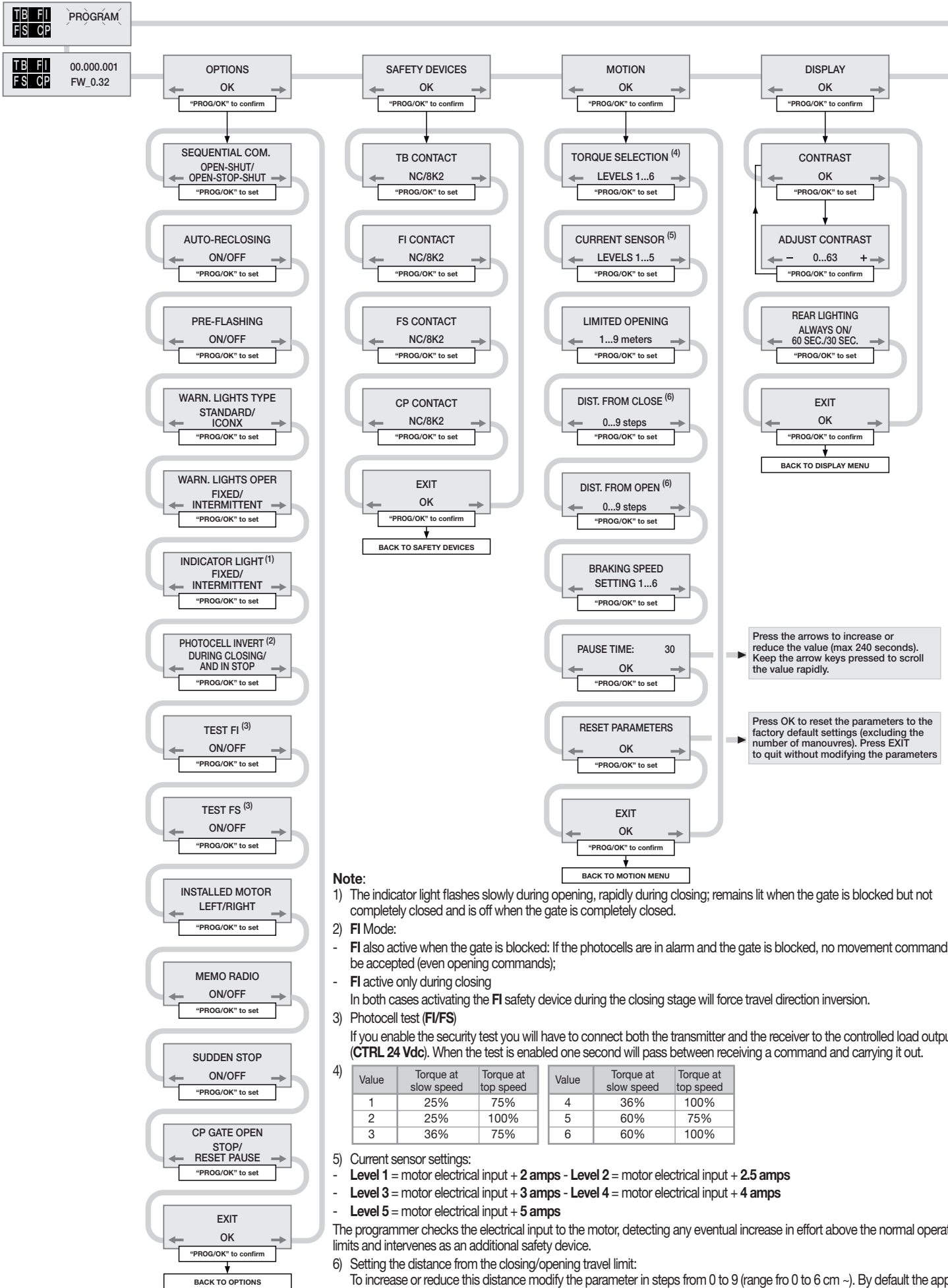
P2 Programming and confirm button (PROG./OK)

P3 Menu navigation button (→)

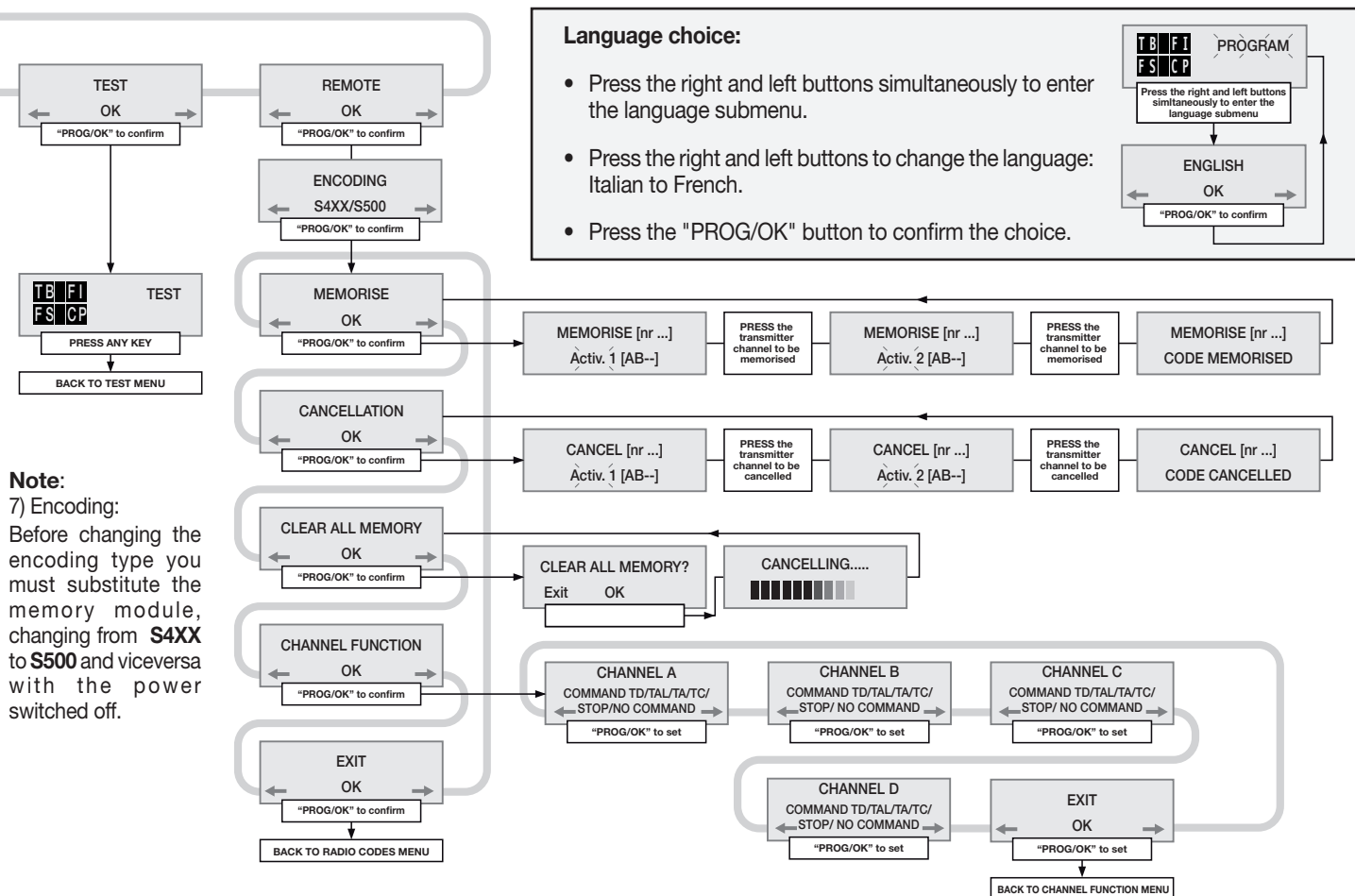
R1 Radio frequency module, 433 MHz for S4XX/S500 transmitters

PROGRAMMING PROCEDURE (parameter setting)

- All the functions of the electronic programmer can be set in the Display menu "LCD1" using the three buttons contained therein:
- use the arrows to navigate through the menu and/or to adjust the display contrast;
- use "PROG/OK" to modify the parameter settings and/or to confirm.



- Set the main operating parameters (e.g. installation right/left) in the options menu.
- If you have safety devices working with 8.2k contacts select the correct setting from the safety device menu.
- Before programming the gate travel distances select the correct motor in the "Motion" menu.



Alarm indications

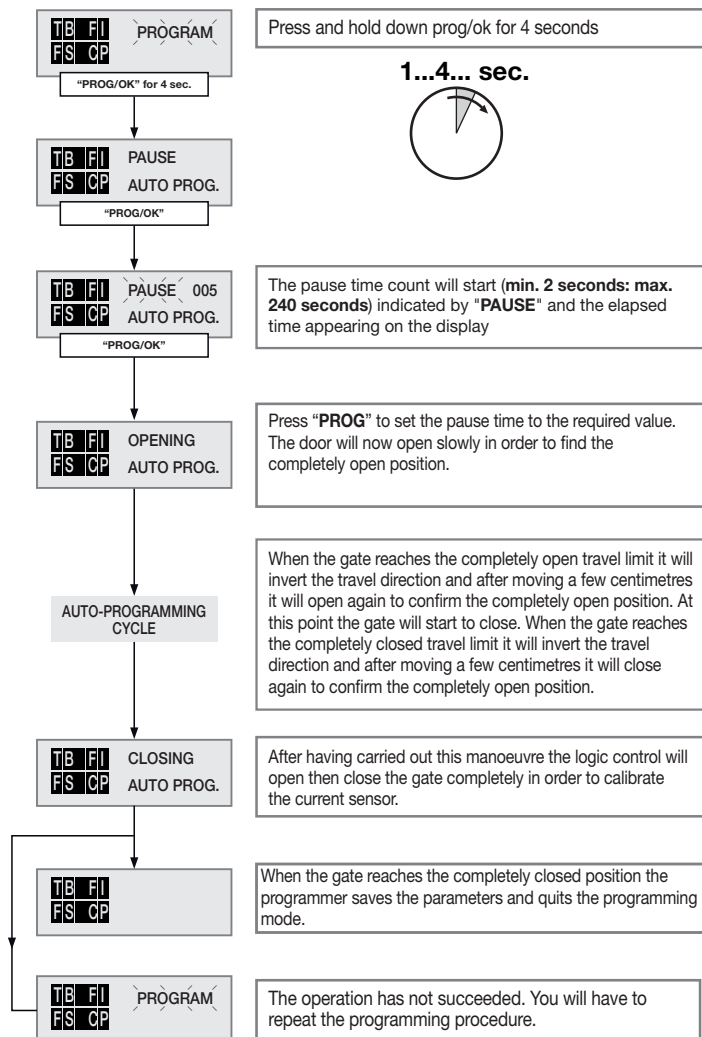
	Flashing on the display. You have to enter the programming mode to program the system.
	During normal operation it indicates that the "automatic repositioning" procedure is about to take place. In this case any commands received (TA, TC, TAL or TD) will automatically start this procedure.
	This happens when an N.C. contact is activated (FI, FS, CP) during encoder programming or automatic repositioning. Once the passive state of the security devices has been reset the gate will start moving again automatically. It also happens if a blackout occurs during programming.
	Safety device test error. Check the condition of the safety devices and make sure that the alarm cuts in when an obstacle interferes with the beam (the relative LED will switch off). In case of anomalies replace the damaged safety device or bridge the contact and deactivate the safety test (option menu).
	This occurs when the programmer sends a command to the motor and nothing happens (the motor doesn't move). Check the motor faston connections and the condition of the fuses "F2", "F3" and then give another opening or closing command. If the motor still doesn't move you are faced with either a mechanical problem or a problem with the programmer.
	If this error occurs during normal motor operation it means that there is a problem with one of the encoder signals. Check the relative connections and carry out automatic repositioning.
	The gate movement direction is different from the encoder setting (eg. the gate moves in the closing direction while the program is carrying out the opening stage). Check the motor power supply connections.
	Current sensor error. When the gate is not moving this symbol means there is a problem with the current sensor.
	When the safety edge intervenes the gate will automatically invert for 5 cm, both in the closing as well as the opening direction, to free the obstacle it will then stop for 3 minutes and then continue moving in the original direction after a 10 second preflashing period has elapsed.
	When the sensor intervenes the gate will automatically invert for 5 cm, both in the closing as well as the opening direction, to free the obstacle it will then stop for 3 minutes and then continue moving in the original direction after a 10 second preflashing period has elapsed.

Operational indications

	Pause time programming or pause for automatic reclosing (if activated)
	Automatic programming under way
	Opening stage
	Block during opening
	Closing stage
	Block during closing
	Current sensor updating (only during programming)
	Test mode
	Battery mode with a fully charged battery
	Battery mode with a discharged battery. The motor and commands will be blocked.

PROGRAMMING PROCEDURE (gate travel distance and current sensor)

- The installation of anti-derailment buffers is **absolutely obligatory**.
- Make sure the safety devices are at rest and the ECU is receiving mains power otherwise you will not be able to enter programming.
- It is not possible to enter programming when working off battery power.
- Before programming set the main operating parameters in the "OPTIONS" menu.



REPOSITIONING



Attention! During the repositioning manoeuvre the current sensor value could be altered. At the end of the manoeuvre, however, it will reset automatically to the chosen value.

If the programmer blocks due to an encoder count error ("Error ENC" on the display), after a programmer reset ("Out of pos.") or when there is a problem with the motor ("Mot error") the warning lights and indicator light will flash simultaneously for **2 seconds** and will then switch off for **10 seconds**.

If in this stage you send a (TA, TC, TAL or TD) command to the programmer.

The programmer will move the gates slowly to the completely closed position (2 times as in the programming procedure) in order to recover the correct position.

At this point the programmer will function normally. If a "TA" command is given the positioning recovery is carried out in the opening direction.

No commands will be accepted during repositioning but the security devices will cut in and block all movement if they go into alarm.

To interrupt the repositioning manoeuvre press the "PROG" or "TB" button.

REMOTE CONTROL

The system can be remotely activated using radio control devices; each channel has a choice of 6 possible functions: **open - shut - limited opening - sequential command - stop - no command**.

To set the functions to channels "A", "B", "C", "D" use the command "CHANNEL FUNCTIONS" from the "REMOTE" menu. The sequential command may be set to "open-stop-shut-stop" or "open-close".

Memory module (MM)

This is extractable, furnished with a non volatile EEPROM type memory, contains the transmitter codes and allows you to memorise up to **300 codes S4XX / 1000 codes S500 series**. The programmed codes are maintained in this module even during blackouts. Before memorising the transmitters for the first time remember to cancel the entire memory content.

If the electronic card has to be replaced due to failure, the module can be extracted from it and inserted into the new card. Make sure that the module is correctly inserted as shown in fig. 3.

TRANSMITTER CODE MANAGEMENT

Memorising a channel

1. Scroll to the "MEMORISATION" step in the "REMOTE" menu and confirm using the "PROG/OK" button:
the indication "Activation 1" will flash on the LCD.
2. Activate the transmitter channel that is to be memorised:
the indication "Activation 2" will flash on the LCD.
3. Activate the transmitter again (same transmitter, same channel*):
the indication "Code memorised" will flash on the LCD.

The number of channels already present in the memory is shown on the first line in brackets.

* if the channel is different or it is a different transmitter (point three) the memorisation attempt will abort without success however "Activation 1" will still flash on the LCD.

Note: It is not possible to memorise a code which is already in memory: if you attempt this the indication "COD. IN MEM." (point one) will appear on the LCD.

Cancelling a channel:

1. Scroll to the "CANCELLATION" step in the "REMOTE" menu and confirm using the "PROG/OK" button:
the indication "Activation 1" will flash on the LCD.
2. Activate the transmitter channel that is to be cancelled:
the indication "Activation 2" will flash on the LCD.
3. Activate the transmitter again (same transmitter, same channel*):
the indication "Code cancelled" will flash on the LCD.

The number of channels already present in the memory is shown on the first line in brackets.

* if the channel is different or it is a different transmitter (point three) the cancellation attempt will abort without success however "Activation 1" will still flash on the LCD.

Note: It is not possible to cancel a code which is not already in memory: if you attempt this the indication "COD. NOT MEM." (point one) will appear on the LCD.

Cancelling all user codes from memory:

1. Scroll to the "CANCEL ALL MEMORY" step in the "REMOTE" menu and confirm using the "PROG/OK" button: a procedure confirmation request "CANC ALL MEMORY?" will appear on the LCD (press one of the arrows to exit the procedure).
2. Press the "PROG/OK" button to confirm the total cancellation:
the indication "CANCELLING" along with a progress bar will appear on the display.
3. Once the total cancellation has been carried out the display will return to "CANCEL ALL MEMORY".

Memorising ulterior channels via radio (S4XX transmitters)

- The system can be remotely activated using radio control devices; (without opening the receiver) by setting "MEMO RADIO" has been activated in the "OPTIONS" menu.
1. Using a transmitter, in which at least one channel button "A, B, C or D" has already been memorised in the receiver, press the button in the transmitter as shown in figure.



Note: all the receivers within range when the channel button is pressed (and which have at least one of the transmitter channel buttons memorised) will activate their signal buzzer "B1" (fig. 3).

2. Press one of the channel buttons on the same transmitter. The receivers which do not contain that channel code will sound a five-second long "beep" and will then deactivate. The receivers which contain the channel code will sound a one-second long "beep" and will enter the "programming via radio" mode.
3. Press the previously chosen channel buttons on the transmitter which you wish to memorise; the receiver will sound 2 "beeps" of half a second each after which the receiver will be ready to receive another code.
4. To leave the programming mode wait for 3 seconds without pressing any buttons. The receiver will sound a five-second long "beep" and will then exit the programming mode.

Note: When the memory is entirely occupied the buzzer will sound 10 rapid "beeps" and will automatically leave the "programming via radio" mode. The same signal is given each time you try to enter "programming via radio" when the memory is full.

Note: the memo radio procedure can only be carried out after programming has terminated and you have quit the setting/programming menu.

Attention: The management instructions for the S504/S508 transmitters is available via the link: http://cardin.it/uploads/tecnicazv1544_03.pdf

CONNECTING THE ANTENNA

Connect an **ANS400 / ANQ800-1** tuned antenna using a coaxial cable **RG58** (impedance **50Ω**) with a maximum length of **15 m**.

FUNCTION MODES

1) Automatic

Selected by enabling automatic reclosing (Automatic reclosing "**ON**" on the display). When the door is completely closed the opening command will start a complete cycle which will end with automatic reclosing.

Automatic reclosing starts after the programmed pause period has elapsed (minimum 2 seconds) when the opening cycle has been completed or straight away after the intervention of a photoelectric cell (the intervention of a photoelectric cell causes the pause time to be reset).

During the pause time "**Pause**" will flash on the display along with the remaining pause time.

pressing the blocking button during this period will stop automatic reclosing and consequently stop the display from flashing. The indicator light remains lit until the closing manoeuvre has terminated.

2) Semiautomatic

Selected by deactivating automatic reclosing (Automatic reclosing "**OFF**" on the display). Work cycle control using separate opening and closing commands.

When the door has reached the completely open position the system will wait until it receives a closing command either via an external control button or via radio control, before completing the cycle.

The indicator light remains lit until the closing manoeuvre has terminated.

3) Manual manoeuvring with released motors

Releasing the motor the gate can be moved by hand; once the motor has been re-engaged the programmer will recover the position after two consecutive attempts to arrive at the travel limit.

4) Emergency manoeuvre

By default the emergency manoeuvre is disabled, to enable it move the jumper to the position **J3** "ENABLE" (fig. 2). If the electronic programmer no longer responds to commands due to a malfunction you may use the **EMRG1** or **EMRG2** inputs to move the gate leaf manually (fig. 2). The **EMRG1** or **EMRG2** inputs directly command the motor without passing through the logic control.

Gate movement will be at normal speed and the direction depends on the installed position of the motor:

- left-hand installed motor **EMRG1** closes and **EMRG2** opens;
- right-hand installed motor **EMRG1** opens and **EMRG2** closes.



Attention! During the emergency manoeuvre all safety devices are disabled and there is no gate positioning control: release the commands before you are at the mechanical travel buffer. Only use the emergency manoeuvre in cases of extreme necessity.

After you have carried out an emergency manoeuvre the electronic programmer will lose the position of the gate ("out of pos" on the display) and therefore when normal operation is restored it will carry out a repositioning manoeuvre.

LIMITED OPENING (PEDESTRIAN ACCESS)

- If the "open-close" mode is set for the "**TD**" button (menu "OPTION") activating the "**TAL**" button will start the limited opening stage (only from the completely closed position) but while the gate is opening pressing the button again will have no effect. Once the opening position has been reached pressing the "**TAL**" button will start closing after which pressing "**TAL**" again will have no effect.
- If the "open-block-close" mode is set for the "**TD**" button (menu "OPTION") activating the "**TAL**" button will start the limited opening stage (only from the completely closed position) pressing the button again will block the gate; pressing the button a third time will start the closing cycle. Pressing the "**TAL**" button again will have no effect.
- If an opening command is received during limited opening; the limited opening command will become a full opening command.
If the **FI** photocell cuts in during the closing stage you will only have partial movement in the opening direction (It reopens only for the distance it has been closing the gate).
- **Note:** The limited opening command can also be given using the second channel radio function.
The limited opening distance is set to half of the entire opening distance.

BATTERY POWERED OPERATION

This device allows the propulsion unit to work during blackouts.

- The programmer has a built in charger for an **NiMH 24V** battery that is managed by a dedicated micro controller. The control chip adjusts the voltage according to the condition of the connected battery.



To avoid the risk of overheating only use the battery supplied by the manufacturer **SPN 999506**.



If the battery shows signs of damage it must be replaced immediately. The battery must only be installed/removed by qualified personnel. Used batteries must not be thrown into domestic rubbish bins and they must be disposed of according to the local standards and regulations in force.

- The unit returns to normal operation once the power supply brought back on line. To use the battery again it must first be allowed to recharge.
The battery charge time with a battery in good condition can take up to a maximum of **16 hours**. If the time required is greater you should consider replacing the battery. You are however advised to replace the battery every three years.
- When the door has stopped, the controlled external devices (**CTRL 24 Vdc**) do not receive power in order to increase the autonomy of the battery. When a command is received however (**via radio** or **via cable**) the programmer sends power to the controlled external devices and checks their security status. It follows therefore that the command will be carried out (security devices at rest) with a one second delay to give time to restore the correct operation of the devices. If after this period a security device is found to be in alarm the command will not be carried out, power to the external devices will be cut off and the programmer will return to stand-by.

Note! If you wish to use an external receiver it must be wired to the binding posts 16-17 (fig. 3) otherwise a command sent **via radio** will not be able to activate the door.

- The self-sufficiency of the system when it is running on battery power is dependent on the ambient conditions and on the load connected at binding posts 16-17 (power is always routed there during blackouts).

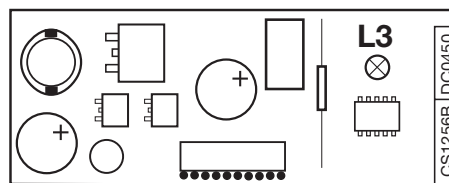


When the battery is completely flat (during blackouts) the programmer will lose the position of the door and therefore when power returns (after the first command given) you will have to carry out the repositioning procedure (see page 21). For this reason you should avoid leaving the **electronic programmer without power** for lengthy periods (more than two days).



- It is not possible to enter the programming mode when running off battery power.
- During blackouts the battery supplies power to both the logic and the motor control parts of the programmer.
For this reason during battery powered operation the voltage applied to the motor is inferior to the voltage supplied during normal operation and the motor will therefore work slower and will not decelerate when approaching the travel limits.

Slot-in battery charger



The LED **L3** indicates the function mode as follows:

Off: missing batteries or the electronic programmer is running off battery power (during a blackout). During the first 10 seconds of operation from the start up of the electronic programmer the battery charger is blocked. After this period has elapsed it may either start self-diagnostics (indicated by a lengthy flashing of the Led) or it will start recharging (Led continuously lit);

Brief flashing: voltage variation has been detected at the battery charger binding posts (e.g. when the batteries are being connected or removed);

Single flashing: this repeats every 2 seconds indicating that the batteries are being topped up to maintain their level;

Remains lit: the batteries are charging. The charge time depends on a number of factors and can last up to 16 hours. Using the motor will increase the time needed for charging.

Battery check

With the gate in the completely closed position and the display switched off. Check that LED "**L3**" (battery charging) is giving off "**one flash at a time**". Switch off the power at the mains and make sure that the display indicates that it is working off battery power and that the charge is greater than 90%. Give a movement command and measure the overall voltage : The reading should be at least **22 Vdc**.

NOTES:

NOTES:

CARATTERISTICHE TECNICHE

- Alimentazione	Vac	230
- Frequenza	Hz	50
- Corrente nominale	A	0,75
- Potenza assorbita	W	170
- Intermittenza di lavoro	%	70
- Velocità di traslazione	m/min	15
- Coppia max.	Nm	20
- Temperatura di esercizio	°C	-20°...+55
- Grado di protezione	IP	44
- Dispositivo di classe II	Cls	

Dati motore:

- Alimentazione motore (max.)	Vdc	30
- Potenza massima resa	W	60
- Corrente assorbita nominale	A	2

Ricevente incorporata:

- Frequenza di ricezione	MHz	433.92 / 868,3
- Numero di canali	N°	4
- Numero di funzioni gestibili	N°	6
- Numero di codici memorizzabili	N°	300 / 1000

TECHNICAL SPECIFICATIONS

- Power supply	Vac	230
- Frequency	Hz	50
- Current input	A	0,75
- Power input	W	170
- Duty cycle	%	70
- Drag speed	m/min	15
- Maximum torque	Nm	20
- Operating temperature range	°C	-20°...+55
- Protection grade	IP	44
- Class II device	Cls	

Motor data:

- Motor power supply (max.)	Vdc	30
- Maximum power yield	W	60
- Nominal current input	A	2

Incorporated receiver card:

- Reception frequency	MHz	433.92 / 868,3
- Number of channels	Nr.	4
- Number of functions	Nr.	6
- Number of memorisable codes	Nr.	300 / 1000

CARACTÉRISTIQUES TECHNIQUES

- Alimentation	Vac	230
- Fréquence	Hz	50
- Courant nominal	A	0,75
- Puissance absorbée	W	170
- Intermittence de travail	%	70
- Vitesse d'entraînement	m/min	15
- Couple maxi.	Nm	20
- Température de fonctionnement	°C	-20°...+55
- Indice de protection	IP	44
- Appareil de classe II	Cls	

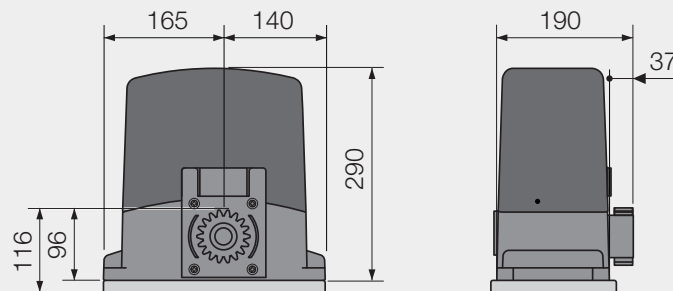
Caractéristiques du moteur

- Alimentation du moteur (max.)	Vdc	30
- Puissance maximum rendue	W	60
- Courant nominal absorbé	A	2

Récepteur incorporé

- Fréquence de réception	MHz	433.92 / 868,3
- Nombre de canaux	Nbre	4
- Nombre de fonctions disponibles	Nbre	6
- Nombre de codes mémorisables	Nbre	300 / 1000

DIMENSIONI D'INGOMBRO - EXTERNAL DIMENSIONS DIMENSIONS D'ENCOMBREMENT AUSSENABMESSUNGEN - DIMENSIONES MÁXIMAS



TECHNISCHE DATEN

- Stromversorgung	Vac	230
- Frequenz	Hz	50
- Nennstrom	A	0,75
- Aufnahmeleistung	W	170
- Betriebsintermittenz	%	70
- Versetzungsgeschwindigkeit	m/min	15
- Maximal Drehmoment	Nm	20
- Betriebstemperatur	°C	-20°...+55
- Schutzgrad	IP	44
- Apparat um klasse II	Cls	

Motordaten

- Motorstromversorgung (Max.)	Vdc	30
- Abgegebene Höchstleistung	W	60
- Nennstromaufnahme	A	2

Eingebauter Empfänger:

- Empfangsfrequenz	MHz	433.92 / 868,3
- Anzahl Kanäle	Nr.	4
- Anzahl Funktionen	Nr.	6
- Anzahl speicherbare Codenummern	Nr.	300 / 1000

DATOS TÉCNICOS

- Alimentación	Vac	230
- Frecuencia	Hz	50
- Corriente nominal	A	0,75
- Potencia absorbida	W	170
- Intermittencia de funcionamiento	%	70
- Velocidad de arrastre	m/min	15
- Par máx.	Nm	20
- Temperatura de funcionamiento	°C	-20°...+55
- Grado de protección	IP	44
- Aparato de clase II	Cls	

Datos motor:

- Alimentación motor (máx.)	Vdc	30
- Potencia máxima cedida	W	60
- Corriente absorbida nominal	A	2

Receptor incorporado:

- Frecuencia de recepción	MHz	433.92 / 868,3
- Número de canales	Núm.	4
- Número de funciones gobernables	Núm.	6
- Número de códigos almacenables	Núm.	300 / 1000



CARDIN ELETTRONICA spa
Via del lavoro, 73 - Z.I. Cimavilla 31013 Codognè (TV) Italy
Tel: +39/0438.404011
Fax: +39/0438.401831
email (Italian): Sales.office.it@cardin.it
email (Europe): Sales.office@cardin.it
Http: www.cardin.it