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
ZVL538.00	SLX	324	12-06-2013

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 seiner 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
AUTOMATISIERUNG FÜR SCHIEBETORE MIT GLEICHSTROMMOTOR
AUTOMATIZACIÓN PARA CANCILLAS CORREDERAS CON MOTOR DE CORRIENTE CONTINUA
AUTOMATISERING VOOR SCHUIFPOORTEN MET EEN GELIJKSPANNINGSMOTOR

CE

24Vdc Motors 100/SLX324

ITALIANO

ENGLISH

FRANÇAIS

DEUTSCH

ESPAÑOL

NEDERLANDS

ZVL538.00 - Mod: 16-01-2014

CARDIN ELETTRONICA spa
Via del lavoro, 73 – Z.I. Cimavilla 31013 Codognè (TV) Italy
Tel.: (+39) 04 38 40 40 11
Fax: (+39) 04 38 40 18 31
e-mail (Italy): sales.office.it@cardin.it
e-mail (Europe): sales.office@cardin.it
http: www.cardin.it

CODICE	SERIE	MODELLO	DATA
DCE085	SLX	24 Vdc	26-02-2013

Dichiarazione di Incorporazione (Direttiva Macchine 2006/42/EC, All. IIB)

Il costruttore: **CARDIN ELETTRONICA S.p.A.**
DICHIARA CHE L'APPARECCHIATURA DESTINATA AD ESSERE INSERITA IN MACCHINE E NON FUNZIONANTE IN MODO INDIPENDENTE:

Nome dell'apparato	**Motoriduttore per cancelli scorrevoli**
Tipo di apparato	**Automazione a 24 Vdc per cancelli scorrevoli fino a kg 3000**
Modello	**SLX324**
Marchio	**Cardin Elettronica**
Anno di prima fabbricazione	**-**

è conforme alle disposizioni delle seguenti direttive comunitarie:
- Direttiva 2004/108/CE (Compatibilità Elettromagnetica)
- Direttiva 2006/95/CE (Bassa Tensione)
- Direttiva 99/05/CE (R&TTE)

e sono state applicate le seguenti norme e/o specifiche tecniche:
- EN 55014-1 : 2006
- EN 55014-2 : 1997+A1:2001+A2:2008
- EN 55022 : 2006+A1:2007
- EN 61000-3-2 : 2006
- EN 61000-3-3 : 1995+A1:2001
- EN 301489-3 : 2002
- EN 60335-1 : 2002 (e aggiornamenti successivi) + FPrAF:2009

DICHIARA CHE L'APPARECCHIATURA È IDEATA PER ESSERE INCORPORATA IN UNA MACCHINA O PER ESSERE ASSEMBLATA CON ALTRI MACCHINARI PER COSTITUIRE UNA MACCHINA CONSIDERATA DALLA DIRETTIVA 2006/42/CE E SUCCESSIVI EMENDAMENTI.
INOLTRE DICHIARA CHE NON È CONSENTITO METTERE IN SERVIZIO L' APPARECCHIATURA FINO A CHE LA MACCHINA NELLA QUALE SARÀ INCORPORATA E DELLA QUALE DIVENTERÀ COMPONENTE NON SIA STATA IDENTIFICATA E DICHIARATA LA CONFORMITÀ ALLE DISPOSIZIONI DELLA DIRETTIVA 2006/42/CEE E SUCCESSIVI EMENDAMENTI.

Cardin Elettronica si impegna a trasmettere, in risposta a una richiesta adeguatamente motivata delle autorità nazionali, informazioni pertinenti sulla quasi-macchina in oggetto.

Codognè il 07/06/2013

Persona autorizzata a costituire la documentazione tecnica

CARDIN ELETTRONICA S.p.A.
Via del Lavoro, 73 - Z.I. Cimavilla
31013 CODOGNE' (TV)
C.F. e P.IVA: IT00681370268
Tel. +39.0438.404011 Fax +39.0438.401831

Ing. A. Fiorotto (Responsabile tecnico R&D Laboratory)

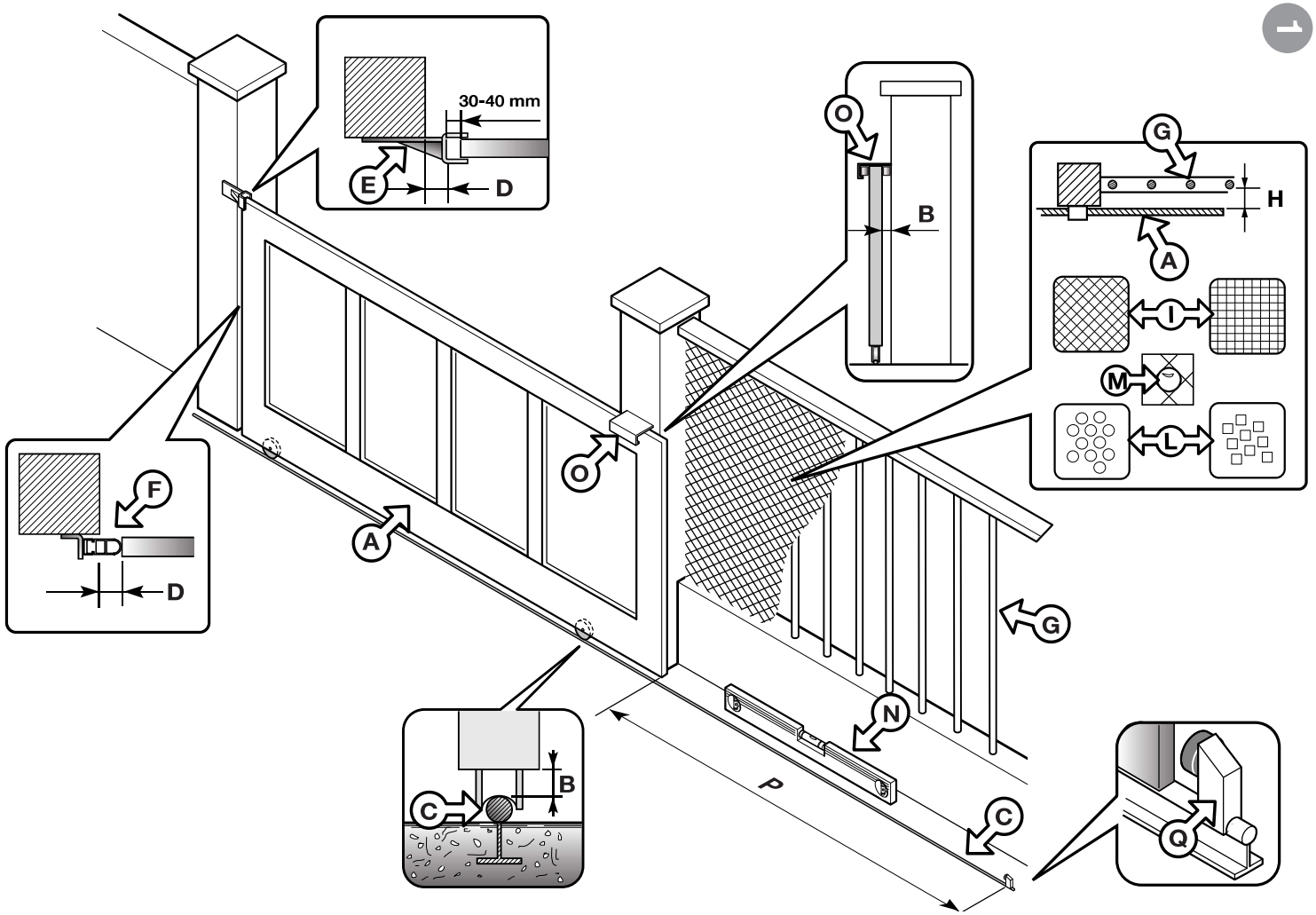
Rappresentante legale dell'azienda

CARDIN ELETTRONICA S.p.A.
Via del Lavoro, 73 - Z.I. Cimavilla
31013 CODOGNE' (TV)
C.F. e P.IVA: IT00681370268
Tel. +39.0438.404011 Fax +39.0438.401831

Dott. Cristiano Cardin (Amministratore delegato)

The **CE conformity** declaration for Cardin products is available in original language from the site **www.cardin.it** under the section "Standards and Certification".
Les déclarations de **conformité CE** des produits Cardin sont disponibles dans la langue originale sur le site **www.cardin.it** dans la section "normes et certificats".
Die **CE-Konformitätserklärungen** für die Cardin-Produkte stehen in der Originalsprache auf der Homepage **www.cardin.it** im Bereich "Normen und Zertifizierung" zur Verfügung.
Las declaraciones de **conformidad CE** de los productos Cardin se encuentran disponibles en el idioma original en el sitio **www.cardin.it** en la sección "normas y certificaciones".

VERIFICHE PRELIMINARI - PRELIMINARY CHECKS - CONTRÔLES À EFFECTUER AVANT LE MONTAGE
VORKONTROLLEN - PRUEBAS PREVIAS - CONTROLES VOORAF



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 and 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

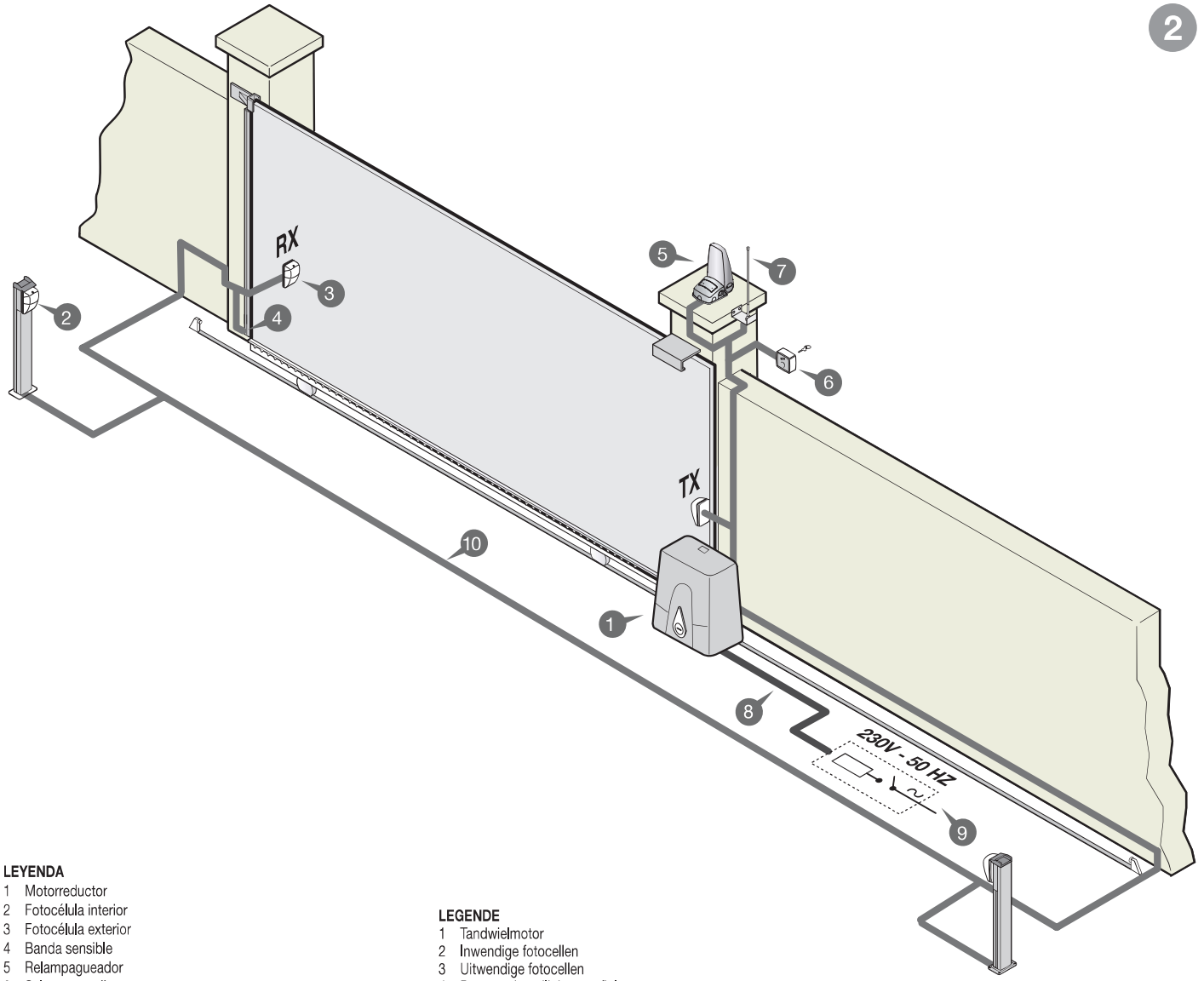
NOMENCLATURE
A Surface du portail
B Distance entre parties fixes et mobiles
C Rail de guidage
D Distance de sécurité
E Butée en fermeture
F Élément élastique déformable
G Clôture
H Distance entre clôture et portail
I Grillage ou grille
L Panneau métallique perforé
M Bille d'essai de passage
N Niveau 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 Wasserwaage
O Gleitschuhe oder Führungsrollen
P Torflügellaufstrecke
Q Mechanischer Endanschlag bei Öffnung

LEYENDA
A Superficie cancilla
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 cancilla
I Red de alambre o cancilla
L Elemento metálico agujereado
M Bola de prueba paso
N Nivel de burbuja
O Patines o rodillos de guía
P Carrera cancilla
Q Tope mecánico en fase de apertura

LEGENDE
A Poortoppervlak
B Afstand tussen het vaste deel en de bewegende delen
C Loopwielgeleiding
D Veiligheidsafstand
E Mechanische sluitbewegingsbegrenzing
F Rubberen persoonsbeveiligingsbuffer
G Hekwerk
H Afstand tussen het hek en de poort
I Gaas mat
L Geperforeerde metalen plaat
M Testkogel
N Waterpas
O Geleideportaal
P Poortbewegingsafstand
Q Mechanische openingsbewegingsbegrenzing

ESEMPIO D'INSTALLAZIONE - INSTALLATION EXAMPLE - EXEMPLE D'INSTALLATION ANLAGENART - INSTALACIÓN ESTÁNDAR - INSTALLATIEVOORBEELD



LEGENDA
1 Motoriduttore
2 Fotocellula interna
3 Fotocellula esterna
4 Costa sensibile
5 Lampeggiatore
6 Selettore a chiave
7 Antenna esterna (cavo coassiale **RG58** Impedenza **50Ω**)
8 Cavo alimentazione principale **230 Vac**
9 Interruttore onnipolare con apertura contatti min. **3 mm**
10 Canalatura per collegamenti a bassa tensione

Attenzione: Lo schema rappresentato è puramente indicativo e viene fornito come base di lavoro al fine di consentire una scelta dei componenti elettronici Cardin da utilizzare. Detto schema non costituisce pertanto vincolo alcuno per l'esecuzione dell'impianto

LEGEND
1 Geared motor
2 Internal photocells
3 External photocells
4 Contact safety edge
5 Warning lights
6 Mechanical selector switch
7 External antenna (**RG58** coaxial cable - impedance **50Ω**)
8 Mains cable **230 Vac**
9 All pole circuit breaker (**3 mm** min. between the contacts)
10 Channelling route for low voltage wires

Attention: The drawing is purely indicative and is supplied as working base from which to choose the Cardin electronic components making up the installation. This drawing therefore does not lay down any obligations regarding the execution of the installation.

NOMENCLATURE
1 Motoréducteur
2 Cellule photoélectrique intérieure
3 Cellule photoélectrique extérieure
4 Bord de sécurité
5 Clignoteur
6 Contact à clé
7 Antenne externe (câble coaxial **RG58** impédance **50Ω**)
8 Câble d'alimentation principale **230 Vac**
9 Interrupteur omnipolaire (ouverture contacts d'au moins **3 mm**)
10 Chemin pour branchement basse tension

Attention: ce schéma, diffusé à titre purement indicatif, est destiné à vous aider dans le choix des composants électroniques Cardin à utiliser. Par conséquent, il n'a aucune valeur obligatoire quant à la réalisation de l'installation.

ZEICHENERKLÄRUNG
1 Getriebemotor
2 Interne Lichtschranke
3 Externe Lichtschranke
4 Kontaktleiste
5 Blinklicht
6 Schlüsselschalter
7 Außenantenne (Koaxialkabel **RG58** Impedanz **50Ω**)
8 Hauptversorgungskabel **230 Vac**
9 Allpoliger Schalter (Kontaktabstand von mindestens **3 mm**)
10 Kanalverlauf für Anschluss auf Niederspannung

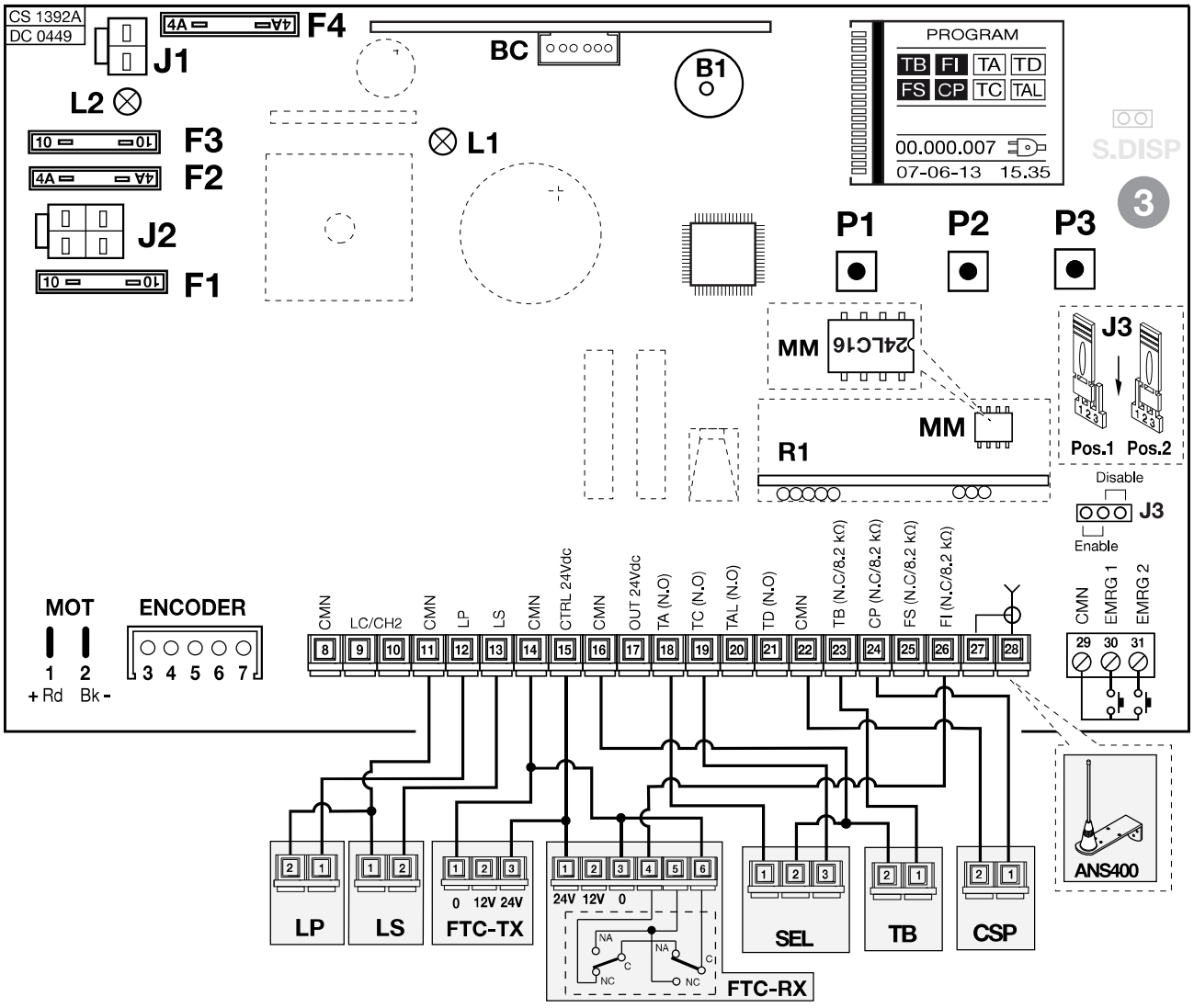
Achtung: Bei dem dargestellten Plan handelt es sich nur um ungefähre Angaben und er wird als Arbeitsgrundlage geliefert, um eine Auswahl der zu benutzenden elektronischen Komponenten von Cardin zu erlauben. Der besagte Plan ist daher für die Ausführung der Anlage nicht bindend.

LEYENDA
1 Motorreductor
2 Fotocélula interior
3 Fotocélula exterior
4 Banda sensible
5 Relampagueador
6 Selector con llave
7 Antena exterior (Cable coaxial **RG58** Impedancia **50Ω**)
8 Cable de alimentación principal **230 Vac**
9 Interruptor omnipolar (apertura entre los contactos de mín. **3 mm**)
10 Canaleta para el conexionado a baja tensión

Atención: La pantalla que se muestra es sólo indicativa y se suministra como base de trabajo, con el fin de permitir una elección de los componentes electrónicos Cardin por utilizar; en consecuencia, dicho esquema no constituye vínculo alguno para la ejecución del sistema.

LEGENDE
1 Tandwielmotor
2 Inwendige fotocellen
3 Uitwendige fotocellen
4 Persoonsbeveiligingsprofiel
5 Waarschuwingslampen
6 Mechanische keuzeschakelaar
7 Externe antenne (**RG58** coaxkabel - impedantie **50Ω**)
8 Netsnoer **230 Vac**
9 Alpolige uitschakelaar met minimaal **3 mm** tussen de contacten
10 Goot voor laagspanningsbedrading

Let op: Deze tekening dient puur als globale referentie voor het selecteren van de elektronische componenten van Cardin waaruit de installatie wordt samengesteld. Deze tekening legt derhalve geen verplichtingen op met betrekking tot de uitvoering van de installatie.



Collegamento alimentazione generale **230 Vac**

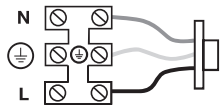
Mains power supply connection **230 Vac**

Branchement alimentation générale **230 Vac**

Anschluss allgemeine Stromversorgung **230 Vac**

Conexión alimentación general **230 Vac**

Netvoeding **230 Vac**



READ THE FOLLOWING REMARKS CAREFULLY BEFORE PROCEEDING WITH THE INSTALLATION. 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.

- 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 a maximum weight of up to **3000 kg.**
- 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) The gate operator is designed for use on gates through which vehicles are passing. Pedestrians should use a separate entrance.
4) The minimum controls which may be installed are OPEN-STOP-CLOSE, these controls must be installed at a height between **1,5** and **1,8 m** and in a location not accessible to children. Controls installed externally must be protected by a safety device inhibiting unauthorised use.
5) The gate must be in full view when it is operating therefore controls must be situated in a position where the operator can see the gate at all times.
6) **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.). 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.

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.

TECHNICAL DESCRIPTION

- Mains power supply **230 Vac.**
- Motor powered with a maximum voltage of **37 Vdc.**
- Upper and lower cover in highly resistant shock-proof plastic.
- The reduction unit stator is made of die cast aluminium and contains a never ending screw and double reduction lubricated with permanently fluid grease.
- Irreversible reduction system with a key-operated manual release mechanism.
- The incorporated electronic programmer contains the power stage, the logic control, battery charger 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 and is connected to the card by Faston clips.
- The system is fitted with electronic deceleration control which reduces the stress caused by the gate inertia when it stops.

Accessories

106/CRENY	Rack (**20 mm x 30 mm**) in glass fibre with upper fastening slits (**1 m**).
106/CRENY1	Rack (**20 mm x 30 mm**) in glass fibre with lower fastening slits (**1 m**).
106/SLOAC	Rack in galvanised steel (**22 mm x 22 mm**) **2 m** to be welded.
106/SLOAC2	Rack in galvanised steel (**12 mm x 30 mm**) **1 m** with fastening slits.
950/BS	Contact safety edge. Lengths **1,5** and **3,0 m** - max 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 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, pag. 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.

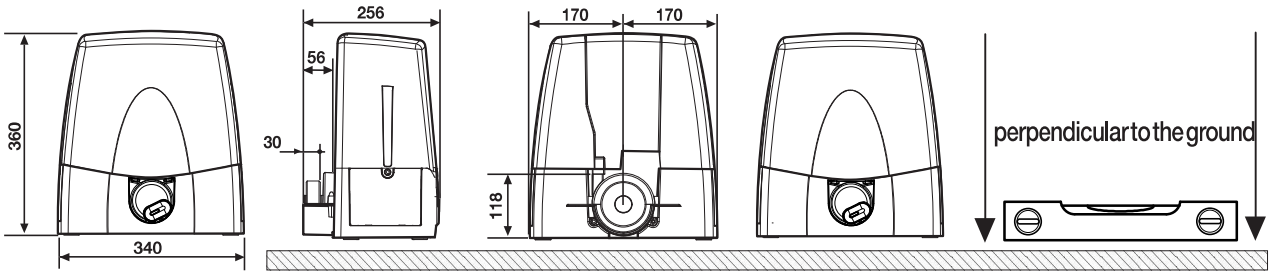
- check the gate components, replace any worn or damaged parts and then lubricate them.
- using a spirit level "**N**" check that the castor guide is in square.
- the upper runner guide "**O**" must have the correct play for the gate and must not inhibit the gate's sliding action.
- check that a mechanical 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.

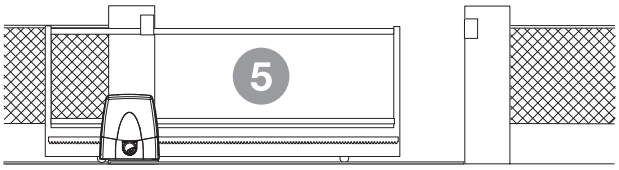
⚠ **Warning!** It is the installer's responsibility to check all critical danger points, to take action and to install any devices needed to guarantee the safety of all people using the gate (risk analysis).

4

Overall dimensions and positioning

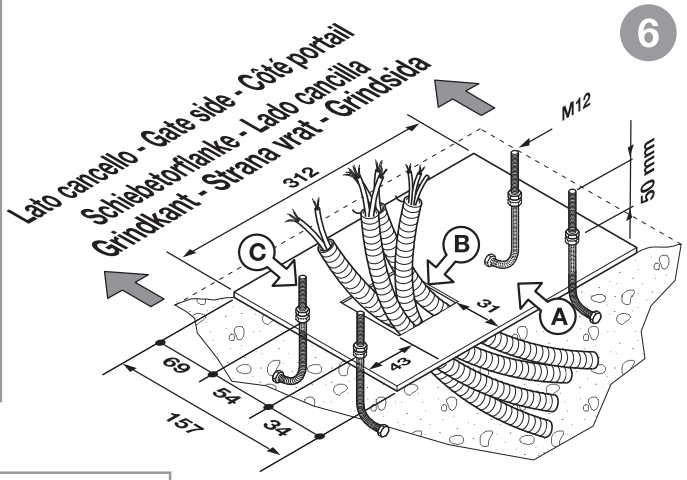
- The geared motor must be correctly positioned when it is installed: perpendicular to the ground and straight up on flat ground.





- 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 19).

6



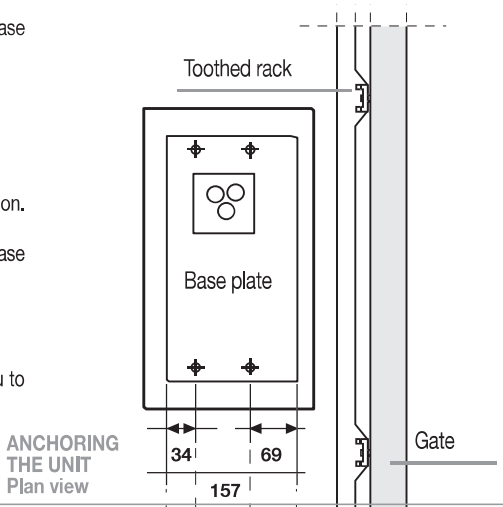
Anchoring the unit (fig. 6, 7)

⚠ **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.
- Attach the anchor bolts to the base plate "**A**" allowing them to protrude by **50 mm** and then tighten down using the supplied **M12** nuts.
- Prepare a cement plinth, in the position where the motor is to be installed, with a depth of **350 mm** (the base should protrude by about **25 mm** to avoid damage by pools of water building up under the appliance).
- 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.

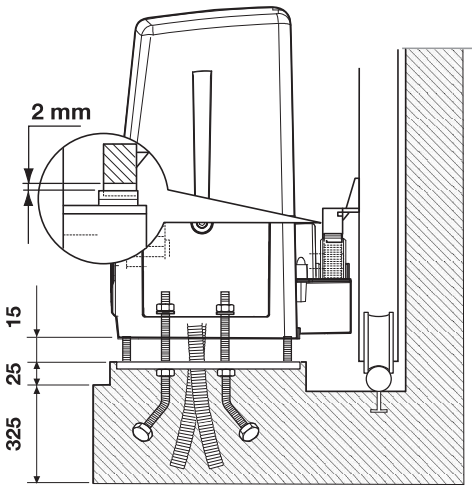
If the runner guide already exists the cement base should be extended to take in part of the runner guide foundation. This will stop the two foundations from giving way separately.

- Unscrew the four **M12** nuts on the four threaded bolts (previously used to block the anchor bolts) from the base of the anchor plate. Then insert the four washers and allow them to rest on the nuts.
- Position the geared motor over the four threaded bolts and allow it to rest on the four washers.
- Fasten in to the base using the other four washers and adjustment nuts supplied with the kit, making sure that the unit remains perfectly level and stable.
- Adjust the height if the unit using the four grub screws already positioned on the motor. This will allow you to adjust the height and position of the motor later on.



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 grub screws at the base of the geared motor. This action will prevent the weight of the sliding gate from damaging the unit when working.



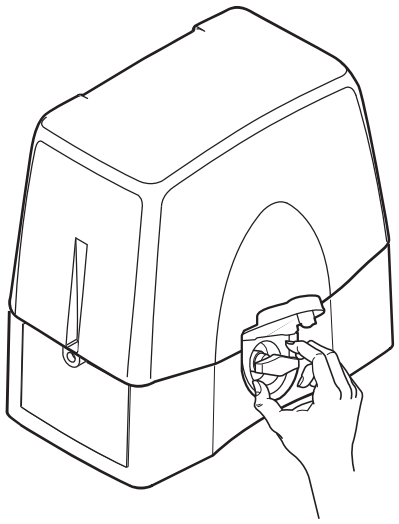
7

MANUAL MANOEUVRE WITH THE MOTOR RELEASED

Manual release is to be carried out with the motor Stopped. To release the gate use the manual release key supplied with the unit. The key should be kept in an easily accessible place.

SCREW OPERATED MANUAL RELEASE SYSTEM

8



To release the unit

1. Rotate the lock protection disk, insert the key, rotate it half a turn anticlockwise and lift up the knob cover.
   The knob is now free and can be released.

2. Rotate the knob clockwise until it can turn no more.
   Attention: do not force the knob to turn further than its travel limit.
   The gears are now released and the gate can be moved manually.

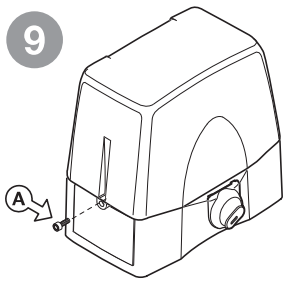
To relock the unit

1. Rotate the knob anticlockwise and move it back to the blocked position.

2. Close the knob cover, rotate the key clockwise and rotate the lock protection disk cover.
   The gears are now blocked and the gate is ready for use.
   Once the system has been reset store the key in a safe place.

⚠ **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.

9



Access to the electronic card

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

To access the motor loosen the two screws "**A**" positioned on either end of the cover as indicated in figure 9.

ELECTRONIC PROGRAMMER

Electronic programmer for a **dc** motor with an incorporated radio receiver card, which allows the memorisation of **300 user codes** (see "remote control" page 20). The "rolling code" type decoder uses **433.92 MHz** series transmitters.
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 one button and allows you to set the system, the current sensor and the entire gate travel distance while the logic carries out position control using an encoder.
The intervention of the anticrush/antidrag sensor during the closing and opening stages causes a brief (**10 cm**) travel direction inversion then a block.

IMPORTANT REMARKS

⚠ **Attention!** There is no **230 Vac** contact on any part of the electronic card: only low voltage safety current is available.

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.**

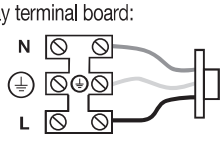
Warning! For the correct operation of the programmer the incorporated batteries must be in good condition: the programmer will **lose the position of the gate** in case of blackouts when the batteries are flat the alarm will sound.

Check the good working order of the batteries every six months (see page 19 **"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 **2 x 1.5 mm²** + ⏚ cable.
- 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). ⚠

Mains power supply connection

- Connect the control and security device wires.
- Run the mains power supply through the cable clamp located on the bottom right of the main circuit board and to the separate 3-way terminal board:
  - connect the neutral to binding post **N**
  - connect the **earth** to binding post ⏚
  - connect the **live** to binding post **L**



1-2 **MOT** motor power supply
(to change the sense of rotation invert the cables 1 and 2
3-4 **ENCODER** inputs **BI-Gr** for the encoder signal
5-6 **ENCODER** inputs **Gy-Yw** for the encoder signal
7 **LCK**
8 **CMN** common for all inputs and outputs
9-10 **LC-CH2** Potential free contact for the activation of the courtesy light (separate power supply **Vmax=30 Vac/dc: Imax=1A**) or the second radio channel. Selection is carried out on the display **LCD1.**
11 **CMN** common for all inputs and outputs
12 **LP 24 Vdc 25 W** output for warning lights intermittent activation (50%), **12,5 W** continuous activation
13 **LS 24 Vdc 3 W** output for an indicator light
14 **CMN** common for all inputs and outputs
15 **24 Vdc** controlled output, powering external loads[1]
16 **CMN** common for all inputs and outputs
17 **24 Vdc** output, powering external loads[1]
18 **TA** (N.O. contact) opening button input
19 **TC** (N.O. contact) closing button input
20 **TAL** (N.O. contact) limited opening button input
21 **TD** (N.O. contact) dynamic button input
22 **CMN** common for all inputs and outputs
23 **TB** (N.C./8.2 kΩ) stop button input (The opening of this contact interrupts the cycle until a new movement command is given) [2]
24 **CP** (N.C./8.2 kΩ) safety edge input. Opening this contact will provoke a travel direction inversion during the closing stage and during the opening stage[2]
25 **FS** (N.C./8.2 kΩ) The opening of this contact will block all movement, until the obstruction has been removed and the pause time has elapsed, due to the safety device cutting in, the door will then continue moving in the closing direction (only with automatic reclosing enabled)[2]
26 **FI** (N.C./8.2 kΩ) 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[2]
27 Inner conductor for radio receiver antenna (if an external antenna is fitted use a coaxial type cable **RG58** with an impedance of **50**Ω)
28 Outer conductor for radio receiver antenna
29 **CMN** common for the emergency buttons
30 **EMRG1** (N.A.) ingresso pulsante per manovra di emergenza 1
31 **EMRG2** (N.A.) ingresso pulsante per manovra di emergenza 2

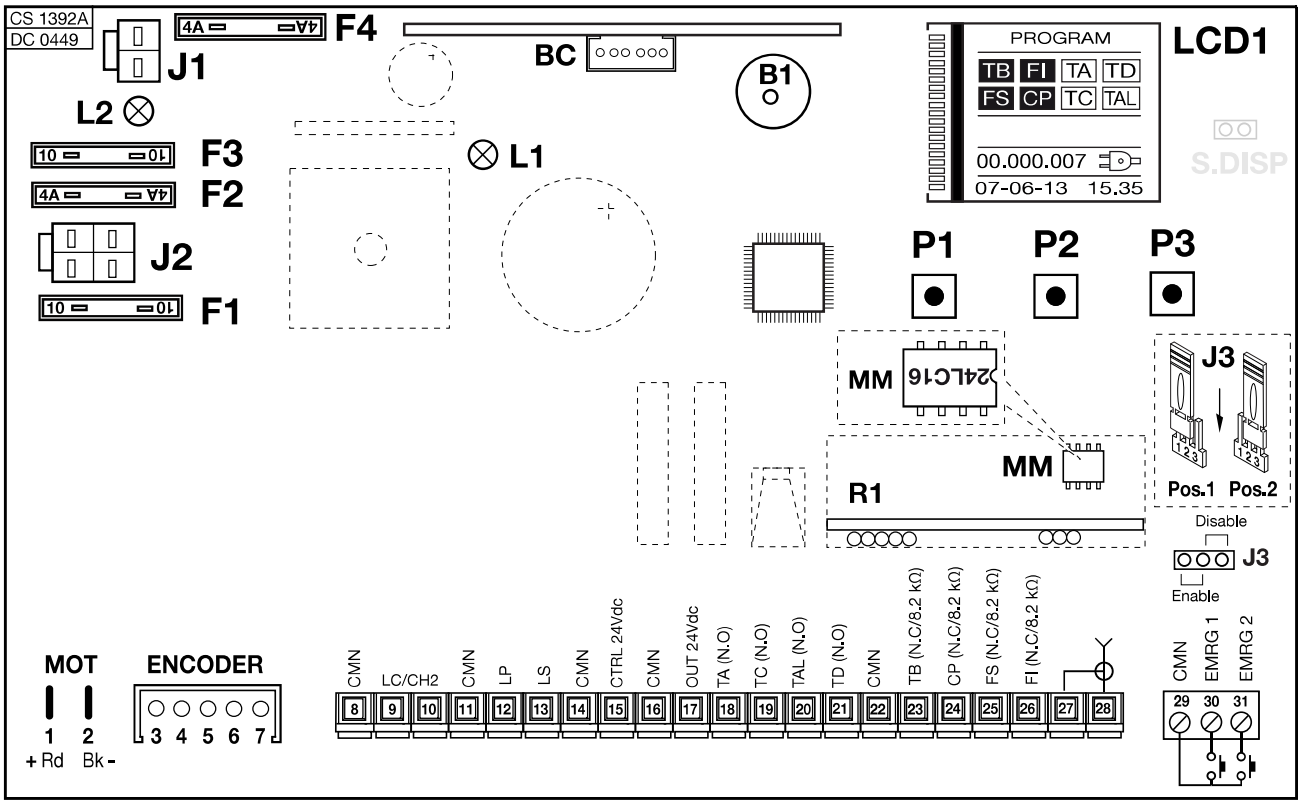
Note[1] The total of the 2 external device outputs must not exceed **10W.**
Note[2] The (N.C./8.2 kΩ) selection is carried out on the **LCD1** display.

ALL UNUSED NC CONTACTS MUST BE JUMPED and consequently the corresponding security device tests (**FI**, **FS**) must also be deactivated.
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 (**CTRL24Vdc**).
If the test is active there will be a 1 second delay between the command transmission and movement of the gate/s.
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 fleshing 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.



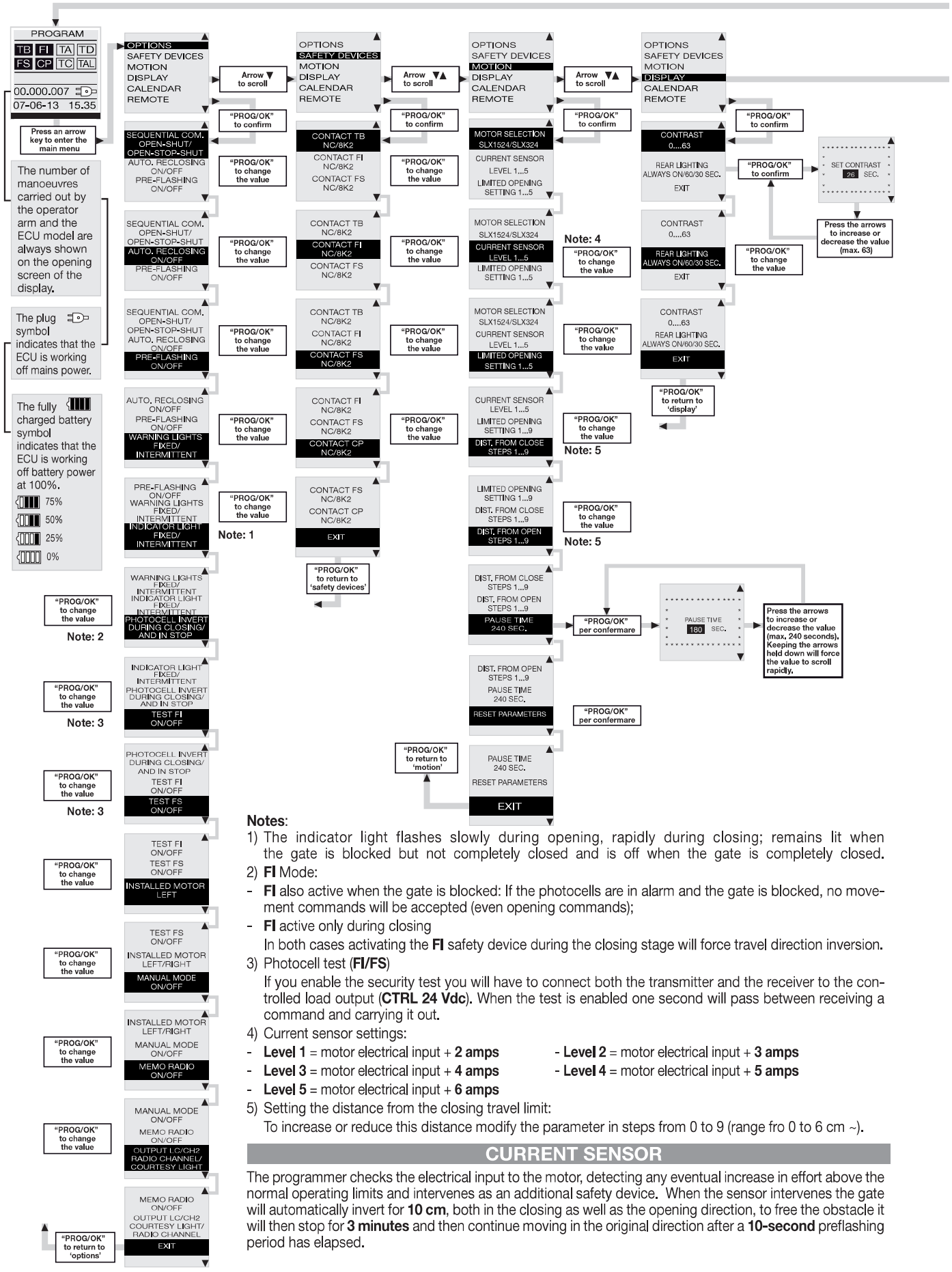
B1 Signal buzzer "**via radio**" mode
BC Battery charger card
LCD1 Display
F1 **15A** blade fuse[4] (motor power protection)
F2 **4A** blade fuse[4] (**24V** circuit protection)
F3 **15A** blade fuse[4] (motor protection during battery operation)
F4 **4A** blade fuse[4] (**24V** circuit protection during battery operation)

Nota[4] These are **automotive** type blade fuses (max. voltage **58V**)

J1 Battery connection
J2 Transformer secondary protection
J3 Emergency enable jumper
MM 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 **S449** 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.



Notes:

1) The indicator light flashes slowly during opening, rapidly during closing; remains lit when the gate is blocked but not completely closed and is off when the gate is completely closed.
2) **FI** Mode:
   - **FI** also active when the gate is blocked: If the photocells are in alarm and the gate is blocked, no movement commands will be accepted (even opening commands);
   - **FI** active only during closing

   In both cases activating the **FI** safety device during the closing stage will force travel direction inversion.
3) Photocell test (**FI/FS**)

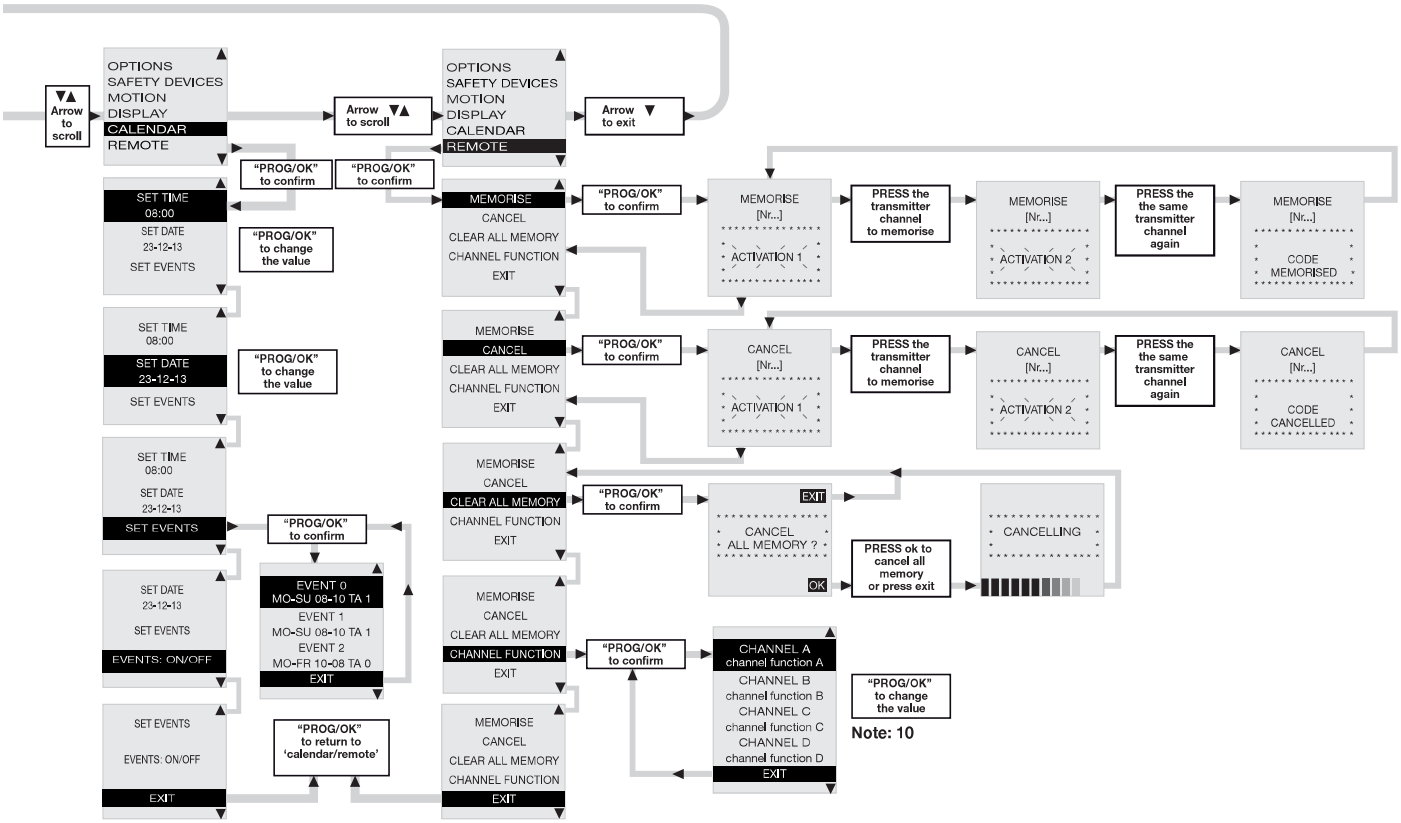
   If you enable the security test you will have to connect both the transmitter and the receiver to the controlled load output (**CTRL 24 Vdc**). When the test is enabled one second will pass between receiving a command and carrying it out.
4) Current sensor settings:
   - **Level 1** = motor electrical input + **2 amps**
   - **Level 2** = motor electrical input + **3 amps**
   - **Level 3** = motor electrical input + **4 amps**
   - **Level 4** = motor electrical input + **5 amps**
   - **Level 5** = motor electrical input + **6 amps**
5) Setting the distance from the closing travel limit:

   To increase or reduce this distance modify the parameter in steps from 0 to 9 (range fro 0 to 6 cm ~).

CURRENT SENSOR

The programmer checks the electrical input to the motor, detecting any eventual increase in effort above the normal operating limits and intervenes as an additional safety device. When the sensor intervenes the gate will automatically invert for **10 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.

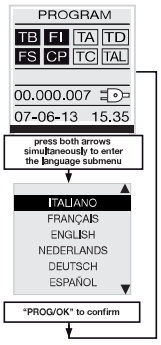
- Set the main operating parameters (e.g. installation right/left) in the options menu.
- If you have safety devices working with 8.2k contacts select the correct setting from the safety device menu.
- Before programming the gate travel distances select the correct motor in the "Motion" menu.



Events On/Off:
Setting one of the radio channels to 'events on/off' will allow you to activate/deactivate the events via radio control. Activation will be indicated by the warning light and indicator light flashing for 6 seconds. Deactivation will be indicated by the lights flashing for 3 seconds.

Language choice:

- Press the right and left buttons simultaneously to enter the language submenu.
- Press the right and left buttons to change the language: Italian to English.
- Press the "PROG/OK" button to confirm the choice.



Operational indications

PAUSE	Pause time programming or pause for automatic reclosing (if activated)
AUTO PROG	Automatic programming under way
OPENING	Opening stage
STOP OPENING	Block during opening
CLOSING	Closing stage
STOP CLOSING	Block during closing

Alarm indications

PROGRAM	Flashing on the display. You have to enter the programming mode to program the system.
OUT OF POS	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.
AUTO PROG	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 ERROR	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 (indication white characters on a black background). In case of anomalies replace the damaged safety device or bridge the contact and deactivate the safety test (option menu).
ERROR MOT	This occurs when the programmer sends a command to the motor and nothing happens (motor doesn't move). Check the Faston connections of the motor and the condition of the fuses "**F3**", "**F4**" 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.
ERROR ENC	Encoder count error. If this error occurs during normal motor operation it means that there is a problem with the encoder signal. Check the relative connections and carry out automatic repositioning.
ERROR DIR	Encoder direction error. 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 motor power supply connections.
ERROR SENS	Current sensor error. When the gate is not moving this symbol means there is a problem with the current sensor.
ACT. SAFETY EDGE	When the safety edge intervenes the gate will automatically invert for a few moments, 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.
ACTIVE SENSOR	When the sensor intervenes the gate will automatically invert for a few moments, 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.

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.

Press and hold down prog/ok for 4 seconds

1...4... sec.

The pause time count will start (**min. 2 seconds: max. 240 seconds**) indicated by "**PAUSE**" and the elapsed time appearing on the display

Press "**PROG**" to set the pause time to the required value. The gate will now open slowly in order to find the completely open position.

When the gate reaches the completely open travel limit it will invert the travel direction and after moving a few centimetres it will open again to confirm the completely open position. At this point the gate will start to close. When the gate reaches the completely closed travel limit it will invert the travel direction and after moving a few centimetres it will close again to confirm the completely closed position.

After carrying out this manouvre the control logic will carry out a complete opening and closing cycle at the standard operating speed in order to calibrate the current sensor.

When the gate reaches the completely closed position the programmer saves the parameters and quits the programming mode. The operation has not succeeded. You will have to repeat the programming procedure.

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."), when the motor has been released ("Released motor") or 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 7 possible functions: **open - shut - limited opening - sequential command - CH2 output - stop - events on/off.**

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 and contains the transmitter codes and allows you to memorise up to **300 codes**. 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. 2.

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

- 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. 2).

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.

CONNECTING THE ANTENNA
Connect an **ANS400** tuned antenna using a coaxial cable **RG58** (impedance **50**Ω) 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 by carrying out the "repositioning" cycle.

4) Emergency manoeuvre
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.

COURTESY LIGHT /CH2 RADIO OUTPUT
Binding posts "**9**","**10**" are linked to a C-NO relay; this can be activated by selecting the relative function from the LCD display in the "OPTIONS" menu.

Courtesy light: the contact is closed by a timer.
CH2 radio: the contact works as a second radio channel.

Binding posts "**9** ","**10**" only give a potential free contact; this means that the courtesy light will have to be powered by an external circuit and the contact used as a simple switch.

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 999540**.
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.

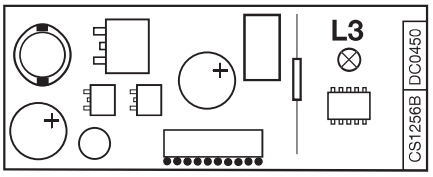
Note! If you wish to use an external receiver it must be wired to the binding posts 16-17 (fig. 1) otherwise a command sent **via radio** will not be able to activate the door.

- 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 18). 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.**

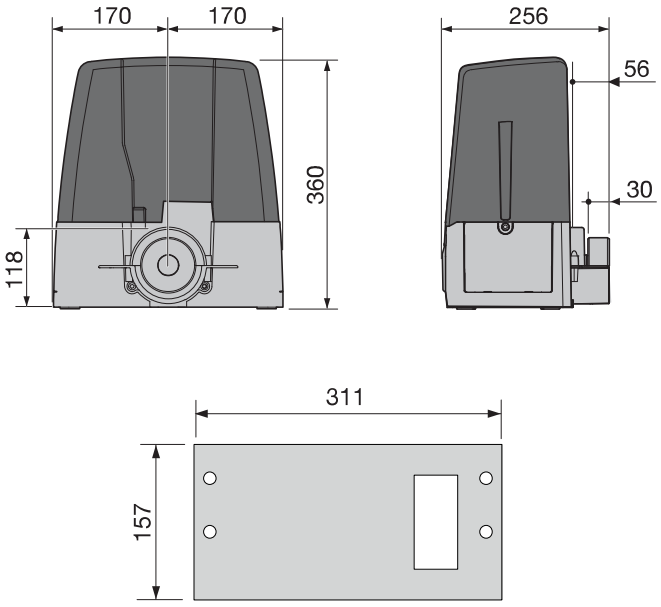
CARATTERISTICHE TECNICHE

- Alimentazione	Vac	230
- Frequenza	Hz	50
- Corrente nominale	A	1,1
- Potenza assorbita	W	250
- Intermittenza di lavoro	%	70
- Velocità di traslazione	m/min	8
- Coppia max.	Nm	90
- Temperatura di esercizio	°C	-20°...+55
- Grado di protezione	IP	44
Dati motore:		
- Alimentazione motore	Vdc	24
- Potenza massima assorbita	W	160
- Corrente nominale assorbita	A	4,5
Ricevente incorporata:		
- Frequenza di ricezione	MHz	433.92
- Numero di canali	N°	4
- Numero di funzioni gestibili	N°	2
- Numero di codici memorizzabili	N°	300

TECHNICAL SPECIFICATIONS

- Power supply	Vac	230
- Frequency	Hz	50
- Current input	A	1,1
- Power input	W	250
- Duty cycle	%	70
- Drag speed	m/min	8
- Maximum torque	Nm	90
- Operating temperature range	°C	-20°...+55
- Protection grade	IP	44
Motor data:		
- Motor power supply	Vdc	24
- Maximum power input	W	160
- Nominal current input	A	4,5
Incorporated receiver card:		
- Reception frequency	MHz	433.92
- Number of channels	Nr.	4
- Number of functions	Nr.	2
- Number of memorisable codes	Nr.	300

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



CARACTÉRISTIQUES TECHNIQUES

- Alimentation	Vac	230
- Fréquence	Hz	50
- Courant nominal	A	1,1
- Puissance absorbée	W	250
- Intermittence de travail	%	70
- Vitesse d'entraînement	m/min	8
- Couple maxi.	Nm	90
- Température de fonctionnement	°C	-20°...+55
- Indice de protection	IP	44
Caractéristiques du moteur		
- Alimentation du moteur	Vdc	24
- Puissance maximum absorbée	W	160
- Courant nominal absorbé	A	4,5
Récepteur incorporé		
- Fréquence de réception	MHz	433.92
- Nombre de canaux	Nbre	4
- Nombre de fonctions disponibles	Nbre	2
- Nombre de codes mémorisables	Nbre	300

DATOS TÉCNICOS

- Alimentación	Vac	230
- Frecuencia	Hz	50
- Corriente nominal	A	1,1
- Potencia absorbida	W	250
- Intermitencia de funcionamiento	%	70
- Velocidad de arrastre	m/min	8
- Par máx.	Nm	90
- Temperatura de funcionamiento	°C	-20°...+55
- Grado de protección	IP	44
Datos motor:		
- Alimentación motor	Vdc	24
- Potencia máxima absorbida	W	160
- Corriente nominal absorbida	A	4,5
Receptor incorporado:		
- Frecuencia de recepción	MHz	433.92
- Número de canales	Núm.	4
- Número de funciones gobernables	Núm.	2
- Número de códigos almacenables	Núm.	300

TECHNISCHE DATEN

- Stromversorgung	Vac	230
- Frequenz	Hz	50
- Nennstrom	A	1,1
- Aufnahmeleistung	W	250
- Betriebsintermittenz	%	70
- Versetzungsgeschwindigkeit	m/min	8
- Maximal Drehmoment	Nm	90
- Betriebstemperatur	°C	-20°...+55
- Schutzgrad	IP	44
Motordaten		
- Motorstromversorgung	Vdc	24
- Abgegebene Höchstleistung	W	160
- Nennstromaufnahme	A	4,5
Eingebauter Empfänger:		
- Empfangsfrequenz	MHz	433.92
- Anzahl Kanäle	Nr.	4
- Anzahl Funktionen	Nr.	2
- Anzahl speicherbare Codenummern	Nr.	300

TECHNISCHE SPECIFICATIES

- Voeding	Vac	230
- Frequentie	Hz	50
- Invoerstroom	A	1,1
- Invoerspanning	W	250
- Inschakelduur	%	70
- Sleepsnelheid	m/min	8
- Maximumkoppel	Nm	90
- Bedrijfstemperatuurbereik	°C	-20...+55
- Beveiligingsgraad	IP	44
Motorgegevens:		
- Motorvoeding	Vdc	24
- Maximale invoerspanning	W	160
- Nominale invoerstroom	A	4,5
Ingebouwde ontvangerkaart:		
- Ontvangstfrequentie	MHz	433.92
- Aantal kanalen	aantal	4
- Aantal functies	aantal	2
- Aantal geheugencodes	aantal	300

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