

# **BRAIN 03**

**24V / 230V**

# **BRAIN 04**

**24V / 115V**

ISTRUZIONI PER L'USO - NORME DI INSTALLAZIONE

INSTRUCTIONS FOR USE - DIRECTIONS FOR INSTALLATION

INSTRUCTIONS - REGLES D'INSTALLATION

INSTRUCCIONES PARA EL USO - NORMAS PARA LA INSTALACION

GEBRAUCHSANLEITUNG - ANWEISUNGEN ZUR INSTALLATION

GEBRUIKSAANWIJZINGEN - INSTALLATIEVOORSCHRIFTEN

# **GENIUS®**

COMPANY  
WITH QUALITY SYSTEM  
CERTIFIED BY DNV  
= UNI EN ISO 9001/2000=



## AVVERTENZE PER L'INSTALLATORE

### OBBLIGHI GENERALI PER LA SICUREZZA

- 1) ATTENZIONE! È importante per la sicurezza delle persone seguire attentamente tutte le Istruzioni. Una errata installazione o un errato uso del prodotto può portare a gravi danni alle persone.**
- Leggere attentamente le istruzioni prima di iniziare l'installazione del prodotto.
- I materiali dell'imballaggio (plastica, poliuretano, ecc.) non devono essere lasciati alla portata dei bambini in quanto potenzialmente fonte di pericolo.
- Conservare le istruzioni per i riferimenti futuri.
- Questo prodotto è progettato e costruito esclusivamente per l'utilizzo indicato in questa documentazione. Qualsiasi altro utilizzo non espressamente indicato potrebbe pregiudicare l'integrità del prodotto e/o rappresentare fonte di pericolo.
- GENIUS declina qualsiasi responsabilità derivata dall'uso improprio o diverso da quello per cui l'automatismo è destinato.
- Non installare l'apparecchio in atmosfera esplosiva: la presenza di gas o fumi infiammabili costituisce un grave pericolo per la sicurezza.
- Gli elementi costruttivi meccanici devono essere in accordo con quanto stabilito dalle Norme EN 12604 e EN 12605.  
Per i Paesi extra-CEE, oltre ai riferimenti normativi nazionali, per ottenere un livello di sicurezza adeguato, devono essere seguite le Norme sopra riportate.
- GENIUS non è responsabile dell'inosservanza della Buona Tecnica nella costruzione delle chiusure da motorizzare, nonché delle deformazioni che dovessero intervenire nell'utilizzo.
- L'installazione deve essere effettuata nell'osservanza delle Norme EN 12453 e EN 12445. Il livello di sicurezza dell'automazione deve essere C+D.
- Prima di effettuare qualsiasi intervento sull'impianto, togliere l'alimentazione elettrica e scollegare le batterie.
- Prevedere sulla linea di alimentazione dell'automazione un interruttore omipolare con distanza d'apertura dei contatti uguale o superiore a 3 mm. È consigliabile l'uso di un magnetotermico da 6A con interruzione omipolare.
- Verificare che a monte dell'impianto vi sia un interruttore differenziale con soglia da 0,03 A.
- Verificare che l'impianto di terra sia realizzato a regola d'arte e collegarvi le parti metalliche della chiusura.
- L'automazione dispone di una sicurezza intrinseca anti-schiacciamento costituita da un controllo di coppia. È comunque necessario verificare la soglia di intervento secondo quanto previsto dalle Norme indicate al punto 10.
- I dispositivi di sicurezza (norma EN 12978) permettono di proteggere eventuali aree di pericolo da **Rischi meccanici di movimento**, come ad es. schiacciamento, convogliamento, ecc.
- Per ogni impianto è di alimentazione l'utilizzo di almeno una segnalazione luminosa nonché di un cartello di segnalazione fissato adeguatamente sulla struttura dell'infisso, oltre ai dispositivi citati al punto "16".
- GENIUS declina ogni responsabilità ai fini della sicurezza e dei buoni funzionamenti dell'automazione, in caso vengano utilizzati componenti dell'impianto non di produzione GENIUS.
- Per la manutenzione utilizzare esclusivamente parti originali GENIUS.
- Non eseguire alcuna modifica sui componenti facenti parte del sistema d'automazione.
- L'installatore deve fornire tutte le informazioni relative al funzionamento manuale del sistema in caso di emergenza e consegnare all'utente utilizzatore dell'impianto il libretto d'avvertenze allegato al prodotto.
- Non permettere ai bambini o persone di sostituire nelle vicinanze del prodotto durante il funzionamento.
- Tenersi fuori dalla portata dei bambini radiocomandi o qualsiasi altro datore di impulso, per evitare che l'automazione possa essere azionata involontariamente.
- Il transito tra le ante deve avvenire solo a cancello completamente aperto.
- L'utente utilizzatore deve avvertire da qualsiasi tentativo di riparazione o d'intervento diretto e invagarsi solo a personale qualificato.
- Non mettere in corto circuito i poli delle batterie e non tentare di ricaricarle con alimentatori diversi dalle schede Master o Slave.
- Non gettare le batterie esauste nei rifiuti ma smaltirle utilizzando gli appositi contenitori per consentire il riciclaggio. I costi di smaltimento sono già stati pagati dalla casa costruttrice.
- Tutto quello che non è previsto espressamente in queste istruzioni non è permesso**

## IMPORTANT NOTICE FOR THE INSTALLER

### GENERAL SAFETY REGULATIONS

- 1) ATTENTION! To ensure the safety of people, it is important that you read all the following instructions. Incorrect installation or incorrect use of the product could cause serious harm to people.**
- Carefully read the instructions before beginning to install the product.
- Do not leave packing materials (plastic, polystyrene, etc.) within reach of children as such materials are potential sources of danger.
- Store these instructions for future reference.
- This product was designed and built strictly for the use indicated in this documentation. Any other use, not expressly indicated here, could compromise the good condition/operation of the product and/or be a source of danger.
- GENIUS declines all liability caused by improper use or use other than that for which the automated system was intended.
- Do not install the equipment in an explosive atmosphere: the presence of inflammable gas or fumes is a serious danger to safety.
- The mechanical parts must conform to the provisions of Standards EN 12604 and EN 12605.  
For non-EU countries, to obtain an adequate level of safety, the Standards mentioned above must be observed, in addition to national legal regulations.
- GENIUS is not responsible for failure to observe Good Technique in the construction of the closing elements to be motorised, or for any deformation that may occur during use.
- The installation must conform to Standards EN 12453 and EN 12445. The safety level of the automated system must be C+D.
- Before attempting any job on the system, cut out electrical power and disconnect the batteries.
- The main power supply of the automated system must be fitted with an all-pole switch with contact opening distance of 3mm or greater. Use of a 6A thermal breaker with all-pole circuit break is recommended.
- Make sure that a differential switch with threshold of 0.03 A is fitted upstream of the system.
- Make sure that the earthing system is perfectly constructed, and connect metal parts of the means of the closure to it.
- The automated system is supplied with an intrinsic anti-crushing safety device consisting of a torque control. Nevertheless, its tripping threshold must be checked as specified in the Standards indicated at point 10.

- The safety devices (EN 12978 standard) protect any danger areas against **mechanical movement Risks**, such as crushing, dragging, and shearing.
- Use of at least one indicator-light is recommended for every system, as well as a warning sign adequately secured to the frame structure, in addition to the devices mentioned at point "16".
- GENIUS declines all liability as concerns safety and efficient operation of the automated system, if system components not produced by GENIUS are used.
- For maintenance, strictly use original parts by GENIUS.
- Do not in any way modify the components of the automated system.
- The installer shall supply all information concerning manual operation of the system in case of an emergency, and shall hand over to the user the warnings handbook supplied with the product.
- Do not allow children or adults to stay near the product while it is operating.
- Keep remote controls or other pulse generators away from children, to prevent the automated system from being activated involuntarily.
- Transit through the leaves is allowed only when the gate is fully open.
- The user must not attempt any kind of repair or direct action whatever and contact a qualified person only.
- Do not short-circuit the poles of the batteries and do not try to recharge the batteries with power supply units other than Master or Slave cards.
- Do not throw exhausted batteries into containers for other waste but dispose of them in the appropriate containers to enable them to be recycled. Disposal costs have already been paid for by the manufacturer.
- 28) Anything not expressly specified in these instructions is not permitted.**

## CONSIGNES POUR L'INSTALLATEUR

### RÈGLES DE SÉCURITÉ

- 1) ATTENTION! Il est important, pour la sécurité des personnes, de suivre à la lettre toutes les instructions. Une installation erronée ou un usage erroné du produit peut entraîner de graves conséquences pour les personnes.**
- Lire attentivement les instructions avant d'installer le produit.
- Les matériaux d'emballage (matière plastique, polystyrène, etc.) ne doivent pas être laissés à la portée des enfants car ils constituent des sources potentielles de danger.
- Conservé les instructions pour les références futures.
- Ce produit a été conçu et construit exclusivement pour l'usage indiqué dans cette documentation. Toute autre utilisation non expressément indiquée pourrait compromettre l'intégrité du produit et/ou représenter une source de danger.
- GENIUS décline toute responsabilité qui dériverait d'usage impropre ou différent de celui auquel l'automatisme est destiné.
- Ne pas installer l'appareil dans une atmosphère explosive: la présence de gaz ou de fumées inflammables constitue un grave danger pour la sécurité.
- Les composants mécaniques doivent répondre aux prescriptions des Normes EN 12604 et EN 12605.  
Pour les Pays extra-CEE, l'obtention d'un niveau de sécurité approprié exige non seulement le respect des normes nationales, mais également le respect des Normes susmentionnées.
- GENIUS n'est pas responsable du non-respect de la Bonne Technique dans la construction des fermetures à motoriser, ni des déformations qui pourraient intervenir lors de l'utilisation.
- L'installation doit être effectuée conformément aux Normes EN 12453 et EN 12445. Le niveau de sécurité de l'automatisme doit être C+D.
- Couper l'alimentation électrique et déconnecter la batterie avant toute intervention sur l'installation.
- Prévoir, sur le secteur d'alimentation de l'automatisme, un interrupteur omipolaire avec une distance d'ouverture des contacts égale ou supérieure à 3 mm. On recommande d'utiliser un magnétothermique de 6A avec interruption omipolaire.
- Vérifier qu'il y ait, en amont de l'installation, un interrupteur différentiel avec un seuil de 0,03 A.
- Vérifier que la mise à terre est réalisée selon les règles de l'art et y connecter les pièces métalliques de la fermeture.
- L'automatisme dispose d'une sécurité intrinsèque anti-écrasement, formée d'un contrôle du couple. Il est toutefois nécessaire d'en vérifier le seuil d'intervention suivant les prescriptions des Normes indiquées au point 10.
- Les dispositifs de sécurité (norme EN 12978) permettent de protéger des zones éventuellement dangereuses contre les **Risques mécaniques du mouvement**, comme l'écrasement, l'achèvement, le convogliement, etc.
- On recommande que toute installation soit dotée au moins d'une signalisation lumineuse, d'un panneau de signalisation fixé, de manière appropriée, sur la structure de la fermeture, ainsi que des dispositifs cités au point "16".
- GENIUS décline toute responsabilité quant à la sécurité et au bon fonctionnement de l'automatisme si les composants utilisés dans l'installation n'appartiennent pas à la production GENIUS.
- Utiliser exclusivement, pour l'entretien, des pièces GENIUS originales.
- Ne jamais modifier les composants faisant partie du système d'automatisme.
- L'installateur doit fournir toutes les informations relatives au fonctionnement manuel du système en cas d'urgence et remettre à l'utilisateur qui utilise l'installation les "Instructions pour l'Usage" fournies avec le produit.
- Interdire aux enfants ou aux tiers de stationner près du produit durant le fonctionnement.
- Éloigner de la portée des enfants les radiocommandes ou tout autre générateur d'impulsions, pour éviter tout actionnement involontaire de l'automatisme.
- Le transit entre les vantaux ne doit avoir lieu que lorsque le portail est complètement ouvert.
- L'utilisateur qui utilise l'installation doit éviter toute tentative de réparation ou d'intervention directe et s'adresser uniquement à un personnel qualifié.
- Ne pas mettre en court-circuit les pôles des batteries et ne pas tenter de les recharger avec d'autres platines d'alimentation que les platines Maître ou Esclave.
- Ne pas jeter les batteries épuisées à la poubelle, mais les éliminer dans des contenants spécifiques pour le recyclage. Les coûts d'élimination des déchets ont déjà été payés par la constructrice.
- 28) Tout ce qui n'est pas prévu expressément dans ces instructions est interdit.**

## ADVERTENCIAS PARA EL INSTALADOR

### REGLAS GENERALES PARA LA SEGURIDAD

- 1) ATENCION: Es sumamente importante para la seguridad de las personas seguir atentamente todas las instrucciones. Una instalación incorrecta o un uso impropio del producto puede causar graves daños a las personas.**
- Leer detenidamente las instrucciones antes de instalar el producto.
- Los materiales del embalaje (plástico, poliestireno, etc.) no deben dejarse al alcance de los niños, ya que constituyen fuentes potenciales de peligro.
- Guardar las instrucciones para futuras consultas.
- Este producto ha sido proyectado y fabricado exclusivamente para la utilización indicada en el presente manual. Cualquier uso diverso del previsto podría

# 24 Vdc ELECTRONIC CONTROL UNIT FOR SWING GATES

## USE INSTRUCTIONS - INSTALLATION INSTRUCTIONS

### 1. GENERAL CHARACTERISTICS

This 24 Vdc control unit for swing gates offers high performance and a wide range of adjustments: opening and closing decelerations, possibility of managing one or two motors, management of opening and closing limit-switches, and the possibility of managing two TIMECODERS.

A sophisticated electronic control constantly monitors the power circuit and disables the control unit in the event of malfunctions that could impair efficiency of the electronic clutch.

The parameter settings and the operating logics are set and shown on a handy display, which indicates gate status during normal operation. Operating times are adjusted by self-learning during programming.

The water-tight enclosure is designed to house the control unit, the toroidal transformer and any buffer batteries (optional) having the characteristics and dimensions indicated in the table below.

### 2. TECHNICAL SPECIFICATIONS

Supply voltage of transformer	230/115 V~ (+6 -10%) - 50/60 Hz.
Supply voltage of control unit	24 V~ (+6 -10%) - 50/60 Hz.
Absorbed power	3 W
Motor max load	70 W x 2
Accessories max load	24Vdc 500mA
Flashing lamp/Courtesy light max. load	24Vdc 15W max.
Operating ambient temperature	-20°C +50°C
Protection fuses	4
Function logics	Automatic / Stepped Automatic / Semiautomatic / Stepped Semiautomatic / Condo type
Opening / closing time	Through self-learning during programming
Pause time	Through self-learning during programming
Thrust force	Four levels adjustable on display
Decelerations	Opening and closing
Terminal board inputs	Power supply 24V~ / Battery supply / Encoder Total opening / Pedestrian opening / Opening-closing safety devices / Stop / Opening-closing limit-switch
Radio connector	Rapid 5-pin connector
Terminal board outputs	24Vdc power supply to accessories / 24 Vdc Motors / 24 Vdc Courtesy light-Flashing lamp / 12 Vdc/~ Electric lock
Board dimensions	165 x 130 mm.
Characteristics of 230V~ toroidal transformer	prim. 230V~ / sec. 22V~ / 120VA
Characteristics of 115V~ toroidal transformer	prim. 115V~ / sec. 20V~ / 120VA
Characteristics of optional batteries	12V - 4 Ah / dimens. 90 x 70 x 108 mm.
Characteristics of outdoor enclosure	305 x 225 x 125 mm. - IP55

**ATTENTION:** Different output values can be obtained on the 24V~ voltage depending on the mains voltage value. Before start-up, always check the transformer output voltage. This must not exceed 26V~ for both 230V~ and 115V~ power supply. Voltage must be measured load free, i.e. with the transformer powered and disconnected from the board.

### 3. PRELIMINARY SETTING-UP

**ATTENTION:** To ensure people's safety, all warnings and instructions in this booklet must be carefully observed. Incorrect installation or incorrect use of the product could cause serious harm to people.

Make sure there is an adequate differential switch upstream of the system as specified by current laws, and install an all-pole thermal breaker on the power supply mains.

To lay electric cables, use adequate rigid and/or flexible pipes.

Always separate the connection cables of low voltage accessories from the 115/230 V~ power cables. To prevent any interference whatever, use separate sheaths.

**Maximum length of power cables between control unit and motors must not exceed 10 m, using cables of 2.5mm<sup>2</sup> diameter.**

Procedure for securing components inside the water-tight enclosure.

- 1- Secure the support for the toroidal transformer in position **A** with 3 Ø4.2x13 self-tapping screws (supplied), placing the supplied spacers between the transformer support and the guides of the water-tight enclosure.
- 2- Secure the transformer to the support with 2 clamps (supplied).
- 3- If using buffer batteries, secure the relevant support in position **B** with 4 Ø3.5x9.5 self-tapping screws (supplied), fastening the screws in the crossover holes of the enclosure guides.

**N.B.:** the support is sized to house 2 batteries (not supplied) with the dimensions specified in the table in paragraph 2.

4- Position the batteries on the support and secure them with plastic clamps.

5- Secure the control unit in position **C** with the 4 Ø4.2x13 self-tapping screws (supplied), placing the supplied spacers between the control unit and the enclosure guides.

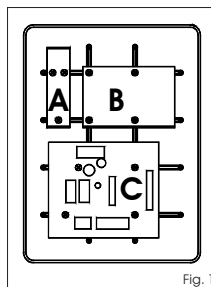


Fig. 1

## 4. CONNECTIONS AND OPERATION

### 4.1. TERMINAL BOARD CN1

#### 4.1.1. Power supply 22V

"**VAC-VAC**" terminals. The secondary circuit of the 24V~50/60 Hz transformer should be connected to this input. Power supplied by the transformer is signalled by the lighting of the "**ALIM**" LED located under the terminal board.

#### 4.1.2. Batteries

"**+BAT - -BAT**" terminals. Connect the power cables of the buffer batteries (optional) to these terminals. The control unit is designed to operate with two buffer batteries, with the minimum characteristics shown on the table in paragraph 2. During normal operation, the unit keeps the batteries charged and these start operating if no power is supplied to the transformer.

#### N.B.:

- Power supplied by batteries only should be considered an emergency situation. The number of possible manoeuvres is linked to the quality of the batteries, the structure of the gate to be moved, the time elapsed since power cut occurred, etc., etc.
- Observe the battery power supply polarity.

#### 4.1.3. Accessories

"**+24V - -24V**" terminals. The accessories power cables should be connected to these terminals.

#### N.B.:

- The maximum load of the accessories must not exceed 500 mA.
- The output of these terminals is DC - observe the power supply polarity of the accessories.

#### 4.1.4. Earth

"**⏏**" terminal. The control unit earthing cable should be connected to this terminal.

#### N.B.:

- This connection is absolutely necessary to ensure a correctly operating control unit.

### 4.2. TERMINAL BOARD CN2

#### 4.2.1. Gearmotor 1

"**APM1 - CHM1**" terminals. For double leaf applications, connect to these terminals the gearmotor fitted on the leaf which must move first. For single leaf applications, the gearmotor must be connected to these terminals. The maximum load of the gearmotor must not exceed 70W.

#### 4.2.2. Gearmotor 2

"**APM2 - CHM2**" terminals. For double leaf applications, connect to these terminals the gearmotor fitted on the leaf which must move last. For single-leaf applications, nothing should be connected to these terminals. The maximum load of the gearmotor must not exceed 70W.

#### 4.2.3. Electric lock

"**ELS - ELS**" terminals. The electric lock, if any, with 12 Vdc/~ power supply, should be connected to these terminals. To facilitate release of the electric lock, the over-pushing stroke can be input by enabling parameter "**F**" (see paragraph 9).

#### N.B.:

- In double-leaf applications, install the electric lock on the leaf where gearmotor 1 is installed.

#### 4.2.4. Flashing lamp / Courtesy light

"**LAMP - LAMP**" terminals. Both a flashing lamp and a courtesy light can be connected to these terminals, both with 24 Vdc power supply and maximum 15W. To make this output operational, select parameter "**G**", see paragraph 9.

#### Flashing lamp operation:

During normal operation, the flashing lamp provides a fixed pre-flashing of 1.5 seconds during both opening and closing. When the gate is open, and the closing safety devices are tripped, the lamp flashes to indicate that a manoeuvre is taking place in the gate movement area. We advise you to connect the flashing lamp before programming, because it indicates its phases. Use a fixed light flashing lamp; flashing is controlled by the control unit.

#### Courtesy light operation:

The courtesy light stays lighted for a fixed time of 90 seconds from the OPEN pulse, after which it goes OFF. Use a lamp with 24 V power supply and maximum 15W.

### 4.3. TERMINAL BOARD CN3

#### 4.3.1. Motor 1 closing limit-switch

"**COMF - FCC1**" terminals. Normally closed contact. This is tripped and stops the closing motion of motor 1. The status of this input is signalled by LED **FCC1**.

#### 4.3.2. Motor 1 opening limit-switch

"**COMF - FCA1**" terminals. Normally closed contact. This is tripped and stops the opening motion of motor 1. The status of this input is signalled by LED **FCA1**.

#### 4.3.3. Motor 2 closing limit-switch

"**COMF - FCC2**" terminals. Normally closed contact. This is tripped and stops the closing motion of motor 2. The status of this input is signalled by LED **FCC2**.

#### 4.3.4. Motor 2 opening limit-switch

"**COMF - FCA2**" terminals. Normally closed contact. This is tripped and stops the opening motion of motor 2. The status of this input is signalled by LED **FCA2**.

#### N.B.:

- If no limit-switch is used, jumper connect the inputs.
- The limit-switches cannot be used as the start of the decelerated section.

#### 4.3.5. Motor 1 encoder

"**ENC1**" terminal. The signal received from the encoder installed on gearmotor 1 must be connected to this terminal. For operation and activation of the encoder, see paragraph 6. If no encoder is used, the input need not be jumper connected.

#### 4.3.6. Motor 2 encoder

"**ENC2**" terminal. The signal received from the encoder installed on gearmotor 2 must be connected to this terminal. For operation and activation of the encoder, see paragraph 6. If no encoder is used, the input need not be jumper connected.

**Attention: In two-motor applications, the encoder must be installed on both motors.**

#### 4.4. TERMINAL BOARD CN4

##### 4.4.1. Total opening

"COM - OPEN A" terminals. Normally open contact. Connect, to these terminals, any pulse generator (e.g. push-button, key selector, etc.) which, by closing a contact, generates a gate total opening or closing pulse. The operation of this generator is defined by parameter "D", see paragraph 9.

##### N.B.:

- A total opening pulse always has priority over pedestrian opening.
- To connect several pulse generators, connect the devices in parallel.

##### 4.4.2. Pedestrian opening

"COM - OPEN B" terminals. Normally open contact. Connect, to these terminals, any pulse generator (e.g. push-button, key selector, etc.) which, by closing a contact, generates a gate partial opening or closing pulse. In double leaf applications, pedestrian opening corresponds to total opening of leaf 1. In single leaf applications, pedestrian opening corresponds to about 30% of memory-stored total opening.

##### N.B.:

- A total opening pulse always has priority over pedestrian opening.
- To connect several pulse generators, connect the devices in parallel.

##### 4.4.3. Stop

"COM - STOP" terminals. Normally closed contact. Connect, to these terminals, any safety device (e.g. pressure switch, safety edge, etc.) which, by opening a contact, immediately stops the gate and disables all automatic functions. The status of this input is signalled by the "STOP" LED. The gate resumes its memory-stored cycle only by means of another total or partial opening pulse.

##### N.B.:

- If no STOP devices are connected, jumper connect the input.
- To connect several STOP commands, connect the devices in series.

##### 4.4.4. Closing safety devices

"COM - FSW CL" terminals. Normally closed contact. Connect, to these terminals, any safety device (e.g. photocell, safety edge, pressure switch etc..) which, by opening a contact, affects the gate's closing motion, reversing it to the mechanical stop, or to the opening limit-switch. The status of this input is signalled by LED "FSW-CL".

##### 4.4.5. Opening safety devices

"COM - FSW OP" terminals. Normally closed contact. Connect, to these terminals, any safety device (e.g. photocell, safety edge, pressure switch etc..) which, by opening a contact, affects the gate's opening motion, causing it to stop immediately. When the safety device has been reset, the gate resumes its memory-stored cycle. The status of this input is signalled by LED "FSW-OP".

##### N.B.:

- If no safety devices are connected, jumper connect the inputs.
- To connect several safety devices, connect the devices in series.

## 5. INSTALLING THE RADIO CONTROL RECEIVER BOARD

The control unit is designed to house a 5-pin radio-receiver module. Installation procedure: turn off power and fit the module in connector CN5 on the control unit.

**ATTENTION: To avoid damaging the receiver and thus irreparably compromising its operation, the receiver must be installed while observing the fitting direction specified in paragraph 13 (connection lay-out).**

This done, observe the radio-receiver instructions to store the radio control in the memory.

## 6. OPERATION WITH ENCODER OR AMPEROMETRIC OPERATION

The control unit has 4 DIP SWITCHES, which enable selection of either amperometric operation or operation with Encoder.

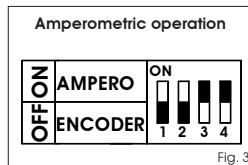
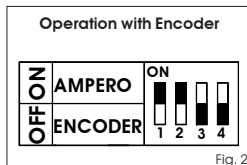
**Operation with encoder** provides greater safety in detecting obstacles and greater repeatability of the deceleration point.

**N.B.: Operation with encoder requires mechanical stops, or limit-switches, for both opening and closing.**

To select operation with encoder, position **DIP-SWITCHES 1 and 2 to ON** and **DIP-SWITCHES 3 and 4 to OFF** (Fig.02).

To select amperometric operation, position **DIP-SWITCHES 1 and 2 to OFF** and **DIP-SWITCHES 3 and 4 to ON** (Fig.03).

**ATTENTION: For a correct programming procedure of the control unit, carry out this operation before programming the control unit because it radically modifies its operation.**



## 7. CONTROL LEDES

LEDS	ON	OFF
<b>ALIM</b>	<b>Power supply by toroidal transformer</b>	Power supplied by batteries or no power supplied
<b>FCC 1</b>	<b>Motor 1 closing limit-switch not tripped</b>	<b>Motor 1 closing limit-switch tripped</b>
<b>FCA 1</b>	<b>Motor 1 opening limit-switch not tripped</b>	Motor 1 opening limit-switch tripped
<b>FCC 2</b>	<b>Motor 2 closing limit-switch not tripped</b>	<b>Motor 2 closing limit-switch tripped</b>
<b>FCA 2</b>	<b>Motor 1 opening limit-switch not tripped</b>	Motor 2 opening limit-switch tripped
<b>STOP</b>	<b>Stop command not activated</b>	Stop command activated
<b>FSW-CL</b>	<b>Closing safety device not tripped</b>	Closing safety device tripped
<b>FSW-OP</b>	<b>Opening safety device not tripped</b>	Opening safety device tripped

**N.B.:**

- Indicated in bold: status of LEDs with gate closed, control unit powered, and both limit-switches installed.
- If the limit-switches are not used, the relevant contacts must be jumper connected and LEDs FCC1 - FCC2 - FCA2 must be lighted.
- If no STOP devices are connected, jumper connect the input. The STOP LED must be lighted.

## 8. OPERATION OF DISPLAY

The control unit has a handy display for viewing and programming the operating parameters. Furthermore, it constantly shows gate status during normal operation.

When operating parameters are being displayed and programmed, the display shows the selected parameter on the left, and its set value on the right. Fig. 04 shows the viewing example of parameter "A" at value "2".

During normal operation, the display shows gate status. The displayed values are indicated on the following table:

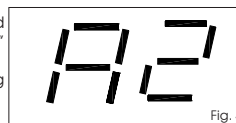


Fig. 4

DISPLAY VALUE	GATE STATUS
--	Gate at rest
OP	Gate opening
tc	Gate open in pause status (Only with automatic re-closure enabled - see next paragraph)
CL	Gate closing

## 9. ADJUSTING THE OPERATING PARAMETERS

**N.B.:** Before you begin adjusting the operating parameters, select the type of operation for the control unit: with or without encoder (see paragraph 6).

To access operating parameter adjustment, follow the instructions below:

- 1- When you have made all the necessary connections, power up the system and check if all the signalling LEDs are in the situation specified in paragraph 7.
- 2- The display shows value "--".
- 3- Press and hold down push-button **P2** until the display shows the name and value of the first parameter.
- 4- Press push-button **P1** to change the value of the parameter.
- 5- To move on to the next parameter, press push-button **P2**.
- 6- When 60 seconds have elapsed without any key being touched, the control unit exits the adjustment mode. You can manually exit the adjustment mode by scrolling all the parameters with push-button **P2**. When the display shows value "--", you have returned to normal operation.

**ENGLISH**

The following table summarises all settable parameters and the assignable values.

DISPLAY	DESCRIPTION
<b>Adjusting the sensitivity of the electronic clutch</b>	
<i>A 1</i>	Minimum motor force
<i>A 2</i>	Medium-low motor force
<i>A 3</i>	Medium-high motor force
<i>A 4</i>	High motor force
<b>Leaf 2 delay:</b> this parameter enables you to select the offset time of the two leaves.	
<i>b 1</i>	1.5 seconds offset
<i>b 2</i>	3 seconds offset
<i>b 3</i>	6 seconds offset
<i>b 4</i>	10 seconds offset
<b>Automatic Reclosure:</b> this function enables or disables automatic gate reclosure.	
<i>c 0</i>	Disabled
<i>c 1</i>	Enabled
<b>Operation of OPEN A command:</b> this function determines the behaviour of the OPEN A (total opening)push-button.	
<i>d 0</i>	Opens / Closes / Opens....
<i>d 1</i>	Opens / Stops/ Closes / Stops / Opens.....
<b>Condo function:</b> if this function is enabled while the gate is being opened, the start command is inhibited.	
<i>E 0</i>	Disabled
<i>E 1</i>	Enabled
<b>Over pushing stroke:</b> if you enable this function, at every OPEN pulse, the leaf on which the electric lock is installed starts its closing movement for a few seconds. This facilitates release of the electric lock.	
<i>F 0</i>	Disabled
<i>F 1</i>	Enabled
<b>Courtesy light/ Flashing lamp:</b> with this parameter, you can select the type of output from the LAMP - LAMP terminals, selecting from among flashing lamp and courtesy light.	
<i>G 0</i>	Flashing lamp
<i>G 1</i>	Courtesy light (active for 90 seconds)
<b>Deceleration point percentage:</b> this parameter is used to set the length of the decelerated section, selecting from the two set values.	
<i>H 0</i>	10% of maximum memory-stored opening
<i>H 1</i>	20% of maximum memory-stored opening
<b>Speed during deceleration phase:</b> this parameter is used to set motor speed during the deceleration phase, selecting it from the two values.	
<i>, 0</i>	High
<i>, 1</i>	Low
<b>Limit-switch operation:</b> this parameter enables you to select operation with or without the limit-switch.	
<i>L 0</i>	Operation without limit-switch
<i>L 1</i>	Operation with limit-switch
<b>Number of motors:</b> this parameter is used to select the type of gate: with one leaf or with two leaves	
<i>n 1</i>	Single-leaf gate, only one motor connected
<i>n 2</i>	Double-leaf gate, two motors connected

## 10. PROGRAMMING

### N.B.:

• Before you begin programming, select the type of operation for the control unit: with or without encoder (see paragraph 6).  
During the programming procedure, the control unit memory-stores the opening, closing mechanical stop points and any pause time before re-closure.

1- Release the gearmotors, locate the leaves at half open point, and re-lock the operators.

2- Power up the control unit and check if value "--" is shown on the display.

3- Press and hold down push-button **P2** until the display shows the first parameter and relevant value.

4- Give an **OPEN A** command with any device connected to this input: the display shows value "**P<sub>r</sub>**", and the leaves begin to move. The first manoeuvre performed by the leaves must be closing. If this does not happen, stop the gate movement with a reset pulse. To do this, make a bridge between the two "**RESET**" PINS, using the connector (see Fig.5). Cut power and put the connector back in its normal position (Fig. 5). Then change over the wires of the motor/s, which had performed the opening operation. Resume the programming stage from point 1.

5- When the closing mechanical stop point is reached, the gearmotors pause for about 2 seconds, and then restart with a total opening manoeuvre up to the opening mechanical stop point or up to the relevant limit-switch.

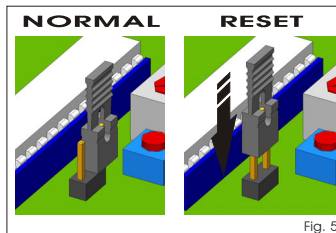
6- If automatic reclosure was not enabled, this means programming has finished, otherwise the control unit begins counting pause time.

7- When the required time has elapsed, give another **OPEN A** pulse, and the gate will begin to close.

8- When the closing stop has been reached, programming has terminated, and the display shows value "--".

### N.B.:

- The display shows value "**P<sub>r</sub>**" during the entire programming procedure.
- The flashing lamp stays lighted on a fixed light during the programming time.
- Leaf movement is decelerated during the programming procedure.



## 11. OPERATION OF ELECTRONIC CLUTCH

This is a very important device for reasons of safety. Its setting stays unchanged long-term, without wear. It is active during both closing and opening. When it operates, it reverses gate movement without disabling automatic closing if activated.

If the clutch operates several consecutive times **during the closing movement**, the control unit goes into **STOP** status, disabling any automatic command. If the clutch operates several consecutive times, this means that the obstacle remains and it could be dangerous to perform any manoeuvre. To restore normal operation, the user must give an **OPEN A** / **OPEN B** pulse.

## 12. PROTECTION FUSES

FUSE	PROTECTION	FUSE	PROTECTION	FUSE	PROTECTION	FUSE	PROTECTION
<b>F1</b> =110A 250V - 5x20	Power supply 24V~	<b>F2</b> =10.63A 250V - 5x20	Supply to accessories and battery- charger	<b>F3</b> =R0.63A 250V - 5x20	Flashing lamp output	<b>F4</b> =R3.15A 250V - 5x20	Electric lock output



## 14. FUNCTION LOGICS

Automatic "A" logic C=1 d=0 E=0						
Pulses						
Gate status	Open A	Open B	Stop	Opening safety devices	Closing safety devices	OP/CL safety device
Closed	Opens the leaf and re-closes after pause time	Executes leaf partial opening and re-closes after pause time	No effect (OPEN disabled)	Disables OPEN commands	No effect	Disables OPEN commands
Open on pause	Reloads pause time	Closes the gate immediately	Stops operation	No effect	Locks pause time, and when released, closes after 5 sec.	Locks pause time, and when released, closes after 5 sec.
Closing	Reverses gate motion	No effect	Stops operation	No effect	Reverses motion	Stops operation and reverses on release
Opening	Reverses gate motion	No effect	Stops operation	Stops operation and resumes on release	No effect	Stops operation and resumes on release
Stepped Automatic "AP" logic C=1 d=1 E=0						
Pulses						
Gate status	Open A	Open B	Stop	Opening safety devices	Closing safety devices	OP/CL safety device
Closed	Opens the leaf and re-closes after pause time	Executes leaf partial opening and re-closes after pause time	No effect (OPEN disabled)	Disables OPEN commands	No effect	Disables OPEN commands
Open on pause	Reloads pause time	Closes the gate immediately	Stops operation	No effect	Locks pause time, and when released, closes after 5 sec.	Locks pause time, and when released, closes after 5 sec.
Closing	Stops gate motion and opens on next pulse	No effect	Stops operation	No effect	Reverses motion	Stops operation and reverses on release
Opening	Stops gate motion and closes on next pulse	No effect	Stops operation	Stops operation and resumes on release	No effect	Stops operation and resumes on release

## Semi-automatic "E" logic C=0 d=0 E=0

## Pulses

Gate status	Open A	Open B	Stop	Opening safety devices	Closing safety devices	OP/CL safety device
Closed	Opens the leaf	Executes partial opening	No effect (OPEN disabled)	Disables OPEN commands	No effect	Disables OPEN commands
Open	Closes	Closes the gate	No effect (OPEN disabled)	No effect	Disables OPEN command and, on release, re-closes after 5 sec.,	Disables OPEN command and, on release, re-closes after 5 sec.,
Closing	Reverses gate motion	No effect	Stops operation	No effect	Reverses gate motion	Stops operation and reverses on release
Opening	Reverses gate motion	No effect	Stops operation	Stops operation and resumes on release	No effect	Stops operation and resumes on release

## Stepped Semi-automatic "EP" logic C=0 d=1 E=0

## Pulses

Gate status	Open A	Open B	Stop	Opening safety devices	Closing safety devices	OP/CL safety device
Closed	Opens the leaf	Executes partial opening	No effect (OPEN disabled)	Disables OPEN commands	No effect	Disables OPEN commands
Open	Closes	Closes the gate	No effect (OPEN disabled)	No effect	Disables OPEN command and, on release, re-closes after 5 sec.,	Disables OPEN command and, on release, re-closes after 5 sec.,
Closing	Stops gate operation and opens on next pulse	No effect	Stops operation	No effect	Reverses gate motion	Stops operation and reverses on release
Opening	Stops gate operation and opens on next pulse	No effect	Stops operation	Stops operation and resumes on release	No effect	Stops operation and resumes on release

## Condo "D" logic C=1 d=0 E=1

## Pulses

Gate status	Open A	Open B	Stop	Opening safety devices	Closing safety devices	OP/CL safety device
Closed	Opens the leaf and re-closes after pause time	Executes leaf partial opening and re-closes after pause time	No effect (OPEN disabled)	Disables OPEN commands	No effect	Disables OPEN commands
Open on pause	Reloads pause time	Closes the gate immediately	Stops operation	No effect	Locks pause time, and when released, closes after 5 sec.,	Locks pause time, and when released, closes after 5 sec.,
Closing	Reverses gate motion	No effect	Stops operation	No effect	Reverses motion	Stops operation and reverses on release
Opening	No effect	No effect	Stops operation	Stops operation and resumes on release	No effect	Stops operation and resumes on release

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