

IMPORTANT REMARKS



TO REDUCE THE RISK OF SEVERE INJURY OR DEATH 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.



- 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.



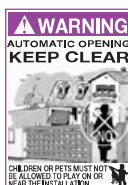
Caution! The installation of both anti-derailment buffers is absolutely obligatory.



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 **35 Vdc**.
- Upper cover in highly resistant shock-proof plastic.
- Integrated lower cover in die cast aluminium containing 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.

IMPORTANT REMARKS

- The system is fitted with electronic deceleration control which reduces the stress caused by the gate inertia when it stops.

Accessories

- 106/SLOPC** - Rack (**20 mm x 20 mm**) in glass fibre with upper fastening slits (**1 m**).
- 106/SLOPC1** - Rack (**20 mm x 20 mm**) in glass fibre with lower fastening slits (**1 m**).
- 106/SLOAC** - Rack in galvanised steel, **2 m** to be welded.
- 106/SLOAC2** - Rack in galvanised steel, **1 m** with slits.
- 950/XLBS** - Contact safety edge available in lengths of: **1,5** and **3,0 m** maximum height **70 mm**.

USER INSTRUCTIONS

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**.

In case of failure or operational anomalies switch off the power at the mains, disconnect the batteries and do not attempt to repair the appliance yourself.

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).

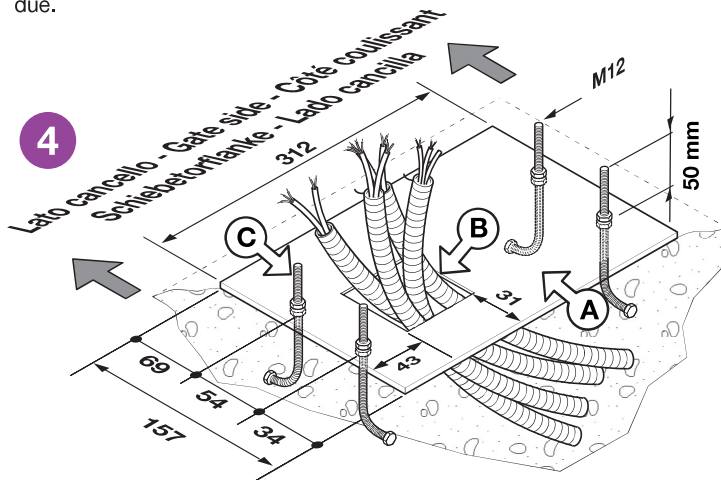
INSTALLATION INSTRUCTIONS

Important: The geared motor can be positioned either to the left or to the right of the passageway. Read the paragraph **"INSTRUCTIONS FOR POSITIONING THE UNIT"**. Once the correct position has been chosen proceed as follows:

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

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

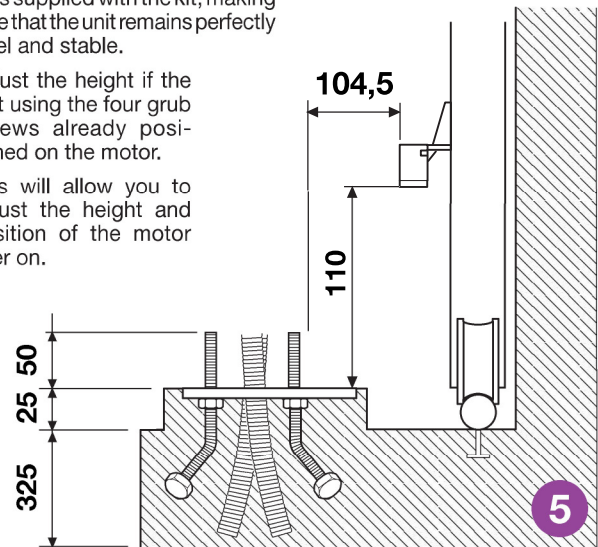
- Run the piping and connection wires to the position where the motor is to be installed.
- Attach the anchor bolts to the base plate "A" allowing them to protrude by **50 mm** and then tighten down using the supplied **M12** nuts.
- Prepare a cement plinth, in the position where the motor is to be installed, 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.

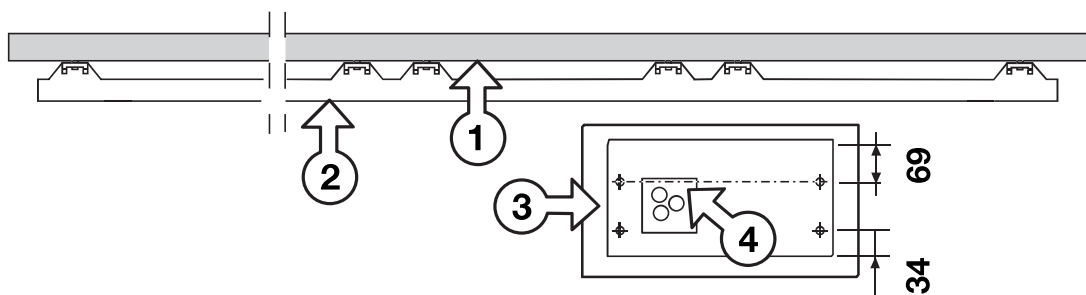
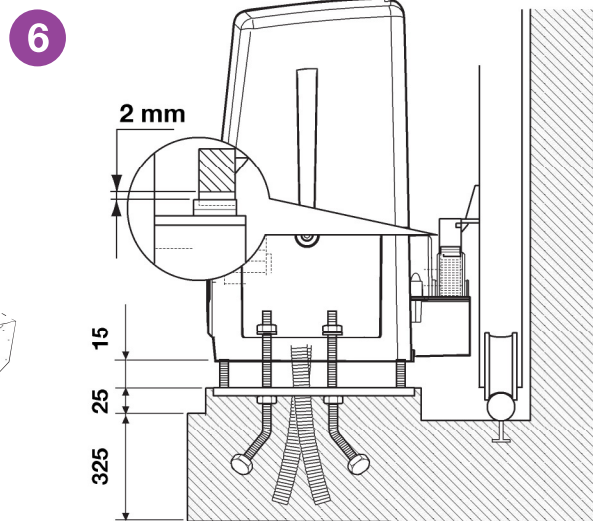
This will allow you to adjust the height and position of the motor later on.



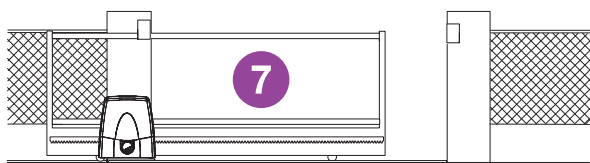
Fitting the toothed rack

- 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.



INSTRUCTIONS FOR POSITIONING THE UNIT



- The geared motor unit has been assembled in the factory to be fitted to the **LEFT SIDE** of the gate (internal view). To install the motor to the **RIGHT** of the gate set dip **8** of the dip-switch "DS1" (fig. 3) to "ON".



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.

To release the unit

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



8

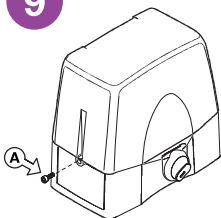
To relock the unit

1. Rotate the knob clockwise and move it back to the blocked position.
2. Rotate the key clockwise and close the key 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. If you release the gate and then give a movement command the following symbol will appear on the display

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.

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



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

- The programmer can activate the motor automatically. This is indicated by the warning lights pre-flashing for 10 seconds, and by the symbol appearing on the display ("automatic repositioning" on page 19).

- The programmer is fitted with an electrical input monitoring system, which is used to block the motor in emergency conditions; however this system is not active during the following stages:

- during the first 5 sec. of an opening stage starting from completely closed
- during the first 2 seconds of all other movement stages
- when the battery undercharged

Do not therefore attempt to physically block the door during these stages, otherwise you may risk blowing the motor circuit protection fuse "F1".

- If you need to check the status of the fuse "F2", disconnect the power supply to the programmer; reconnect it only after having re-inserted the fuse.



- The presence of the electrical input monitoring system does not exclude the need to install photoelectric cells or other safety devices which are foreseen by the **local standards and regulations in force**.

- The geared motor unit has been assembled in the factory to be fitted to the left side of the gate. Read the paragraph "**instructions for positioning the unit**".

- 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 and automatic repositioning will take place.

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

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

- 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.

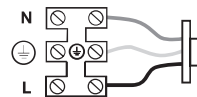
- The terminal wires must be positioned in such a way that both the wire and the insulating sheath are tightly fastened (a plastic jubilee clip is sufficient).



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**



Terminal board connection

- 1 Common for the emergency buttons
- 2 **EMRG 2** (NO contact) emergency manoeuvring button input 2
- 3 **EMRG 1** (NO contact) emergency manoeuvring button input 1
- 4 Common for all inputs and outputs.
- 5 **30 Vdc** output, powering external loads⁽¹⁾.
- 6 Common for all inputs and outputs.
- 7 **30 Vdc** controlled output, powering external loads⁽¹⁾.
- 8 Common for all inputs and outputs.
- 9 **LS 24 Vdc 3W** output for an indicator light.
- 10 **LP 24 Vdc** output for warning lights.
25W intermittent activation (50%), **12,5W** continuous activation
- 11 Common for all inputs and outputs.
- 12 **FTCI** (NC contact) 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.
- 13 **CSP** (NC contact) Safety buffer input). Opening this contact will provoke a travel direction inversion of **10 cm**, a pause of **3 minutes**, after which the motor will continue moving in the original direction after a **10 second** preflashing period has elapsed.
- 14 **TB** (NC contact) Stop button input (The opening of this contact interrupts the cycle until a new movement command is given).
- 15 Common for all inputs and outputs.
- 16 **TD** (NO contact) Dynamic button input
- 17 **TAL** (NO contact) Limited opening button input
- 18 **TC** (NO contact) Closing button input
- 19 **TA** (NO contact) Opening button input
- 20 Outer conductor for radio receiver antenna
- 21 Inner conductor for radio receiver antenna (if an external antenna is fitted use a coaxial cable **RG58** with an impedance of **50Ω**).

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

ALL UNUSED NC CONTACTS MUST BE JUMPED.

If the **FTCI** input has been jumped the **FTCI** security device test must also be deactivated (Dip 7 "**OFF**"). If you want to activate the **FTCI** test both the transmission and receiver parts of the security devices must be connected to the binding post marked "**CTRL 30 Vdc**". If the test is active there will be a 1 second delay between the command transmission and movement of the gate.

Switch on the power and make sure that the indicator LEDs are in the following condition (note: If the display is off you can press the **PROG** key to show the status of the safety devices.

- **L1** Power on **ON**
- **L2** Wrong battery connection **OFF**⁽²⁾
- **L3** Transmitter code programming indicator **OFF**
- **L4** Battery charging **OFF**⁽³⁾
- **L5** Indicator for the blocking button "**TB**" **ON**⁽⁴⁾
- **L6** Indicator for the inverting photoelectric cells "**FTCI**" **ON**⁽⁴⁾
- **L7** Indicator for the contact safety edge "**CSP**" **ON**⁽⁴⁾
- **L8** Indicator for the opening button "**TA**" **OFF**
- **L9** Indicator for the opening button "**TC**" **OFF**
- **L10** Indicator for the limited opening button "**TAL**" **OFF**
- **L11** Indicator for the dynamic button "**TD/CH1**" **OFF**

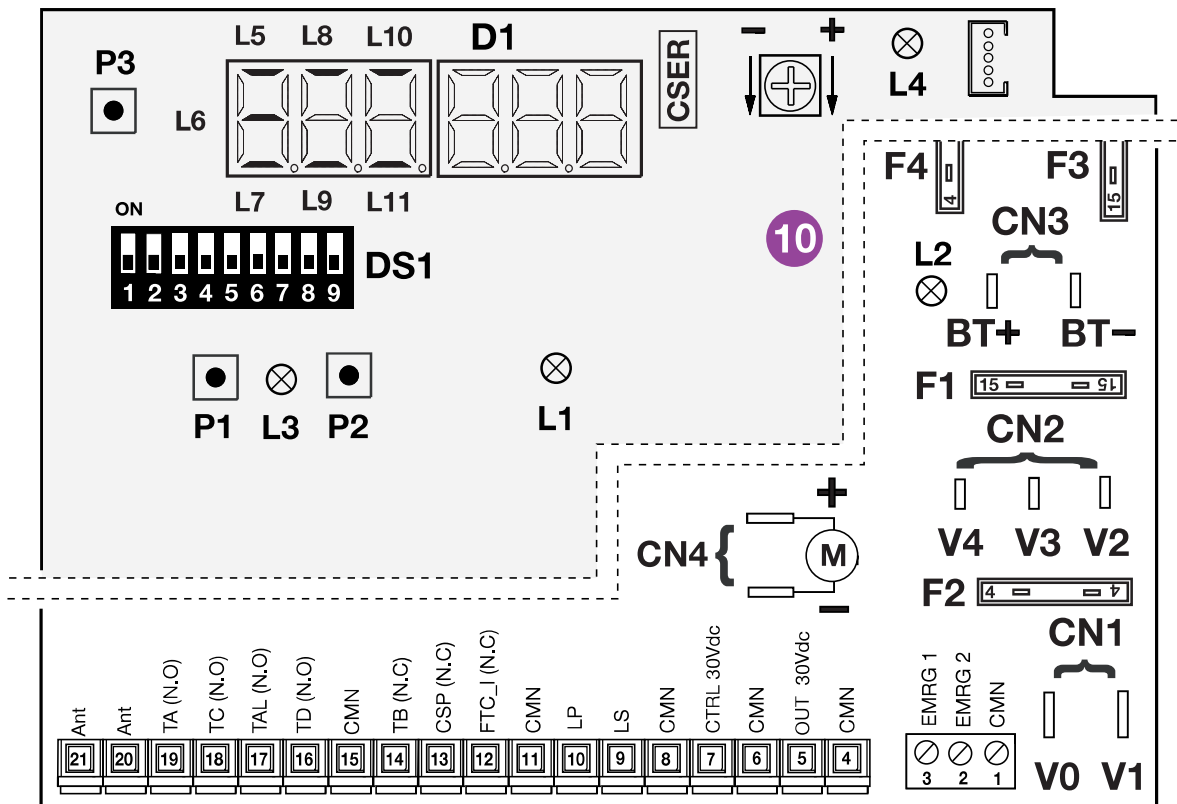
Note ⁽²⁾ If this LED is "**on**" invert the battery power cables immediately.

Note ⁽³⁾ This LED is "**on**" when the battery is charged.

Note ⁽⁴⁾ Check that the activation of the safety devices switches the corresponding LEDs off.

If the **green power on LED 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 do not light up** check the contacts of the relative security devices and check that the unused safety device contacts have been bridged.



- CN1** Secondary Faston connection **24Vac** logic power supply
- CN2** Secondary Faston connection motor circuit power supply
V2:0Vac, V3:20Vac, V4:30Vac
- CN3** Battery Faston connection
- CN4** Motor Faston connection
- CSE** Serial connection (only for diagnostics)
- D1** Six-segment LED display
- DS1** Selection dip-switch

- F1** **15A** blade fuse⁽¹⁾ (motor power protection)
- F2** **4A** blade fuse⁽¹⁾ (**24V** circuit protection)
- F3** **15A** blade fuse⁽¹⁾ (motor power protection during battery operation)
- F4** **4A** blade fuse⁽¹⁾ (**24V** circuit protection during battery operation)


Note ⁽¹⁾: These are **automotive** type blade fuses

PROGRAMMING PROCEDURE (Setting the programmer and the current sensor)



- **Caution!** The installation of both anti-derailment buffers is absolutely **obligatory** before starting programming.
- Make sure that the safety devices are at rest and the ECU is receiving mains power otherwise you will not be able to enter programming.



Caution: If the symbol  appears on the display after 3 minutes has passed since the programmer was powered up, the gate will start moving automatically (after the warning lights have flashed for 10 seconds) to the completely closed position (automatic repositioning).

Dip-switch settings DS1

Sequential command TD/CH1

Dip 1 "ON" = Sequential command "open-close"
Travel direction inversion only during closing.

Dip 1 "OFF" = Sequential command "open-block-close-block"

Automatic reclosing (DIP 2)

Dip 2 "ON" = Automatic reclosing enabled

Dip 2 "OFF" = Automatic reclosing disabled

Pre-flashing (DIP 3)

Dip 3 "ON" = Pre-flashing activated

Dip 3 "OFF" = Pre-flashing excluded

Warning light output (DIP 4)

Dip 4 "ON" = Warning light output intermittent

Dip 4 "OFF" = Warning light output fixed

Indicator light (DIP 5)

Dip 5 "ON" = Indicator light intermittent*

Dip 5 "OFF" = Indicator light fixed

* 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.

FTCI (DIP 6)

Dip 6 "ON" = **FTCI** 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).

Dip 6 "OFF" = **FTCI** active only during closing

In both cases activating the **FTCI** safety device during the closing stage will force travel direction inversion.

FTCI test (DIP 7)

Dip 7 "ON" = **FTCI** test enabled

Dip 7 "OFF" = **FTCI** test disabled

If you enable the security test you will have to connect both the transmitter and the receiver to the controlled load output (**CTRL 30 Vdc**).

When the test is enable one second will pass between receiving a command and carrying it out.

Motor installation (DIP 8)

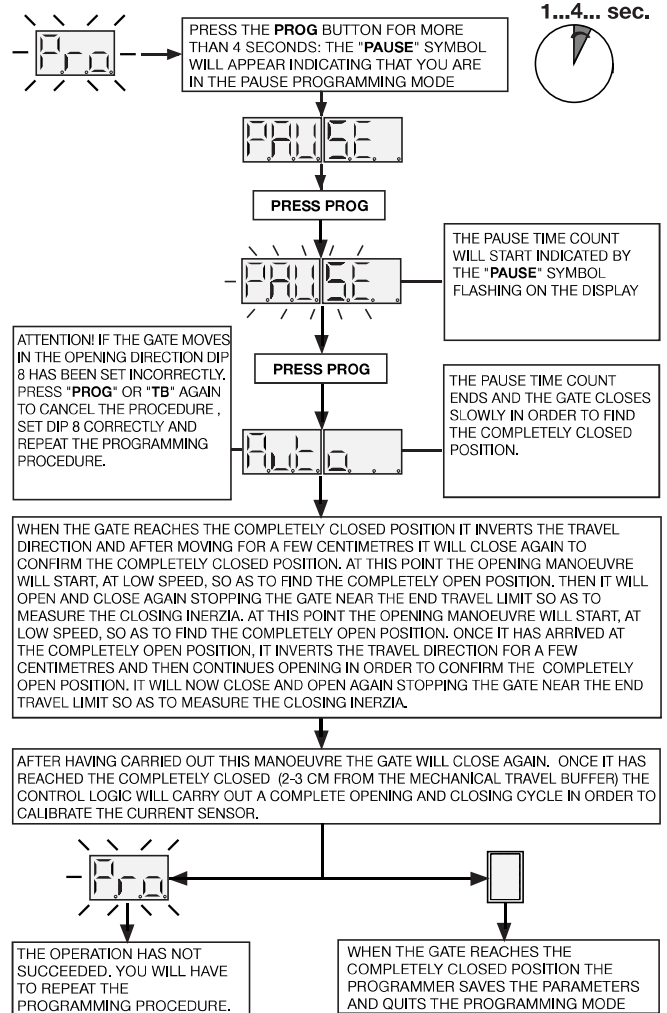
Dip 8 "ON" = Right-hand motor installation

Dip 8 "OFF" = Left-hand motor installation

Manual operating mode (DIP 9)

Dip 9 "ON" = Manual mode enabled

Dip 9 "OFF" = Manual mode disabled



ATTENTION! If you change the dip settings during normal operation you will have to memorise them. When the display is off press the **"PROG"** button once. The symbol "diP" will appear on the display confirming correct memorisation.

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.

After the programmer has been in this condition for **3 minutes** it will (after pre-flashing for **10 seconds**) automatically move the gate, slowly, to the completely closed position (2 times as in the programming procedure) in order to recover the correct position.

- To interrupt the repositioning manoeuvre and delay it for another **3 minutes**, press the "**PROG**" button.



REMOTE CONTROL (fig. 3 page 4)

The system can be remotely activated using radio control devices. Each channel can be set to a maximum of 2 functions:

- function 1: sequential command
- function 2: limited opening or blocking button

To set one of the functions to the channels **A-B-C-D** use the selection jumpers **"J1"**:

- In position **"A"** the first function is active, **TD**;
- In position **"B"** the second function is active, **TAL** or **TB**.

To set function 2 you use jumper **"J3"**.

- In position **"1"** the active radio command is, **TB**;
- In position **"2"** the active radio command is, **TAL**;

The sequential command can be set (dip **"1"**) to work as **"open-block-close-block"** or **"open-close"**.

Memory module (M1)

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. 3.

Signal LEDs "L3" (fig. 3):

Flashing quickly:	cancels a single code
Flashing slowly:	memorises a single code
Permanently lit:	memory full.

TRANSMITTER CODE MANAGEMENT

Memorising a channel (fig. 3):

1. Press and hold down button **"P1" MEMO**: The LED **"L3"** will flash slowly.
2. At the same time activate the transmitter which is to be memorised.
3. Hold down button **"P1" MEMO** until LED **"L3"** starts to flash again.
4. Release the button: The LED will continue to flash.
5. Activate the transmitter again (same transmitter, same channel; if the channel is different or it is a different transmitter the memorisation attempt will abort without success).
6. End of memorisation: the LED **"L3"** will remain lit for 2 seconds, indicating that the transmitter has been correctly memorised.

Note: It is not possible to memorise a code which is already in memory: if you attempt this, the LED will switch off when you activate the transmitter (point 2). Only after releasing the button **"P1" MEMO** will you be able to continue the memorising procedure.

If after activating the transmitter for the first time you wait for more than fifteen seconds without activating the transmitter a second time the memorisation attempt will abort without success.

Cancelling a channel (fig. 3):

1. Press and hold down the button **"P2" DELETE**: the LED **"L3"** will flash quickly.
2. Activate the transmitter channel which is to be cancelled.
3. The LED will remain lit for 2 sec., indicating that the transmitter has been cancelled.

Note: If the user that you wish to cancel is not in memory, the LED will stop flashing; only after releasing the button **"P2"** will you be able to continue the cancellation procedure.

For both the memorisation and cancellation procedures, if the button is released before activating the transmitter the procedure will abort.

Cancelling all user codes from memory (fig. 3):

1. Keep both buttons pressed down (**"P1+P2"**) for more than four seconds.
2. LED **"L3"** will remain lit during the entire cancellation time (about 8 seconds).
3. LED **"L3"** switches off when the cancellation procedure has terminated.

Note: When the memory is almost full the time required to search for a user code could take up to 1 second from when the command was received. If led **"L3"** remains lit memory is completely full. To memorise a new transmitter you will first have to cancel a code from memory.

Memorising ulterior channels via radio

- Memorisation can be activated by radio (without opening the receiver container) if jumper **"J2"** has been inserted (fig. 3).

1. Make sure that the jumper **"J2"** has been inserted (fig. 3).

2. 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 the figure.



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

3. 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.

4. 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.

5. 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.

Led **"L3"** will remain lit on the receiver.

The same signal is given each time you try to enter **"programming via radio"** when the memory is full.

CONNECTING THE ANTENNA


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

FUNCTION MODE

1) Automatic

Selected by enabling automatic reclosing (dip **"2"** in position **"ON"**). When the door is completely closed the opening command will start a complete cycle which will end with automatic reclosing and the night light switching off.

Automatic reclosing starts after the programmed pause period has elapsed 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 the symbol  will flash on the display and 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 (dip **"2"** in position **"OFF"**). 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 manoeuvre

This can be used to close the gate (or open it) under the direct control of the operator by setting dip **"9"** to the **"ON"** position.

This mode is only active after you have programmed the system. In this mode the safety devices **FTCI**, **CSP** and **TB** only work when they are in alarm.

• Closing manoeuvre

This is obtained by keeping the "TC" button pressed down. The motor will block in the closing direction due to:

- releasing the "TC" button.
- activating the blocking button "TB": to move the door again in the closing direction you must first release the "TC" button and then press it again.
- activating the inverting photocells (FTCI) or the safety edge (CSP).

• Opening manoeuvre

This is obtained by keeping the "TA" button pressed down. The motor will block in the closing direction due to:

- releasing the "TA" button.
 - activating the blocking button "TB": to move the door again in the opening direction you must first release the "TA" button and then press it again.
 - activating the inverting photocells (FTCI) or the safety edge (CSP).
- Simultaneously pressing "TA" and "TC" will block the gates movement.




Attention: the "TAL", "TD" and via radio commands are inactive during manual operation.

4) Manual manoeuvre with the motor released

Releasing the motor (see fig. 8) the gate can be moved by hand. The electronic programmer will still monitor the position of the gate.



Attention! If a command is given while the motor is released the symbol  will appear on the display. The repositioning procedure will have to be carried out.


5) 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. The **EMRG1** or **EMRG2** inputs directly command the motor relays without passing through the logic control. Gate movement will be at reduced 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 leaf ( on the display) and therefore when normal operation is restored it will carry out an automatic repositioning manoeuvre (see pag. 19).

BATTERY POWERED OPERATION

This device allows the **SL324ESB** motor for sliding gates to work during blackouts.


- To indicate that the programmer is working off battery power when the gate is completely closed a hyphen  flowing around the perimeter of the display will appear. If the battery is under charged a hyphen  flowing around the lower half of the display will appear. When the battery is almost completely flat the symbol  will appear and the programmer will be blocked.
- After 15 manoeuvres or when the battery power drops below the minimum level the gate will remain completely open even if automatic reclosing has been selected. Normal operation can only be obtained when the power has been restored. To operate using battery power again the batteries will need time to recharge. The battery charge time with batteries in good condition can take up to a maximum of 15 hours. If the time required is greater you should consider replacing the batteries. You are however advised to replace the batteries every three years.
- When the gate is completely closed the controlled external devices (**CTRL 30 dc**) 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 4-5 (fig. 3) otherwise a command sent via radio will not be able to activate the gate.

- 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 4-5 (power is always routed there during blackouts).



When the batteries are completely flat (during blackouts) the programmer will lose the position of the gate and therefore when power returns carry out the repositioning procedure (see pag. 19). For this reason you should **avoid leaving the electronic programmer without power** for lengthy periods (more than two days).

- You cannot 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 supplied to the motor is less than that normally applied and the motor will move more slowly.
- The current sensor is disabled when battery power falls below the minimum level , but all other safety devices are still functional.

Signal LEDs (fig. 3)


L2: lit when the battery is not properly connected during blackouts.

L4 lit when the current supplied by the battery charger is greater than the battery maintenance level (about **50 mA**).



The wires connecting the battery to the charger card must never be short-circuited, this would damage the battery, and in the worst of cases could lead to burns (if metal parts are touching the skin when the contact is made). Only connect them to the Faston (**CN3**) and make sure you respect the polarity. If the batteries are damaged they could leak acid. The batteries must only be installed/removed by qualified personnel. Used batteries must not be thrown into domestic rubbish bins and they must be disposed according to the local standards and regulations in force.

Battery check

Move the gate to the completely closed position and the display will switch off. Check that LED "L4" (battery charging) is off. Switch off the power at the mains and make sure that the symbol  appears on the display. Give a movement command and measure the overall voltage for both batteries. The reading should be about **22 Vdc**.

MAINTENANCE



To use the **24 month** or **100000** manoeuvre guarantee, read the following notes carefully.

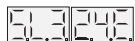
The motor does not normally require particular maintenance; in any case the **24 month** or **100000** manoeuvre guarantee is only valid if the following controls have been observed and eventual maintenance has been carried out to the machine "sliding gate":

- correct lubrication (greasing) of the toothed rack;
- check the straightness of the toothed rack, make sure the teeth fit correctly in the pinion throughout its entire length; in particular the toothed rack must have a cross section of **20 x 20 mm** (see accessories on page 14);
- check the play of the toothed rack - pinion (**1-2 mm** see fig. 6);
- check the battery charge level.

These checks must be written down as they are paramount in validating the guarantee.

INDICATIONS ON THE DISPLAY (D1)

Start up display

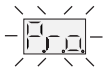


Shown for 2 seconds:
"SL324E" = programmer model;



Indicates the dip-switch setting memorisation stage "_41" = firmware version

Alarm indications



System not programmed

You have to enter the programming mode to program the system



Out of position

When carrying out an installation you will have to enter programming in order to program the gate travel distances. During normal operation it indicates that the "**automatic repositioning**" procedure is about to take place (see page 19). In this case any commands received (**TA**, **TC**, **TAL** or **TD**) will automatically start this procedure.

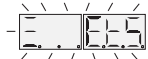


Caution! The gate moves automatically without waiting for a command.



Block during encoder programming

This happens when an N.C. contact is activated (**TB**, **FTCI**, **CSP**) 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 test error

Check the condition of the safety devices and make sure that the alarm cuts in when an obstacle interferes with the beam (the relative LED will switch off). In case of anomalies replace the damaged safety device or bridge the contact and deactivate the safety test (dip 7).



Motor feed error

This occurs when the programmer sends a command to the motor and nothing happens (the motor doesn't move). Check the motor faston connections and the condition of the fuses "**F1**" and "**F3**" and then give another opening or closing command. If the motor still doesn't move you are faced with either a mechanical problem or a problem with the programmer.



A command was received with the motor released



This error normally appears when you have given a command and the motor is released. If it occurs during normal motor operation it means that there is a problem with the encoder signals. Check the relative connections and carry out automatic repositioning (pag. 19).



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 the motor power supply connections and the setting of dip 8.



Current sensor error

When the gate is not moving this symbol means there is a problem with the current sensor.



Motor error



These symbols mean there is a problem with the motor control relays

Operational indications



Pause time programming



Automatic programming under way



Serial line (CSER) active
(only for diagnostics)



Opening stage



Block



Pause for automatic reclosing (if activated)



Closing stage



Current sensor updating (only during programming)



Opening + compensation sensor



Closing + compensation sensor



Test mode



Battery mode with a fully charged battery



Battery mode with an undercharged battery



Block caused by a completely discharged battery