INDEX

GENERAL INFORMATION

GENERAL CHARACTERISTICS

The GATE 2 24V control unit has been designed to manage one or two low voltage swing gate operators with or without electronic limit switches.

Its dimensions are very small and as well as the classic functions refered to the dip-switch it has several other features such as motor speed adjustment, amperometric sensitivity for the anti crush, the adjustment of the leaf delay in closing and alteration of pause time.

The self- learning of working time can be done automatically.

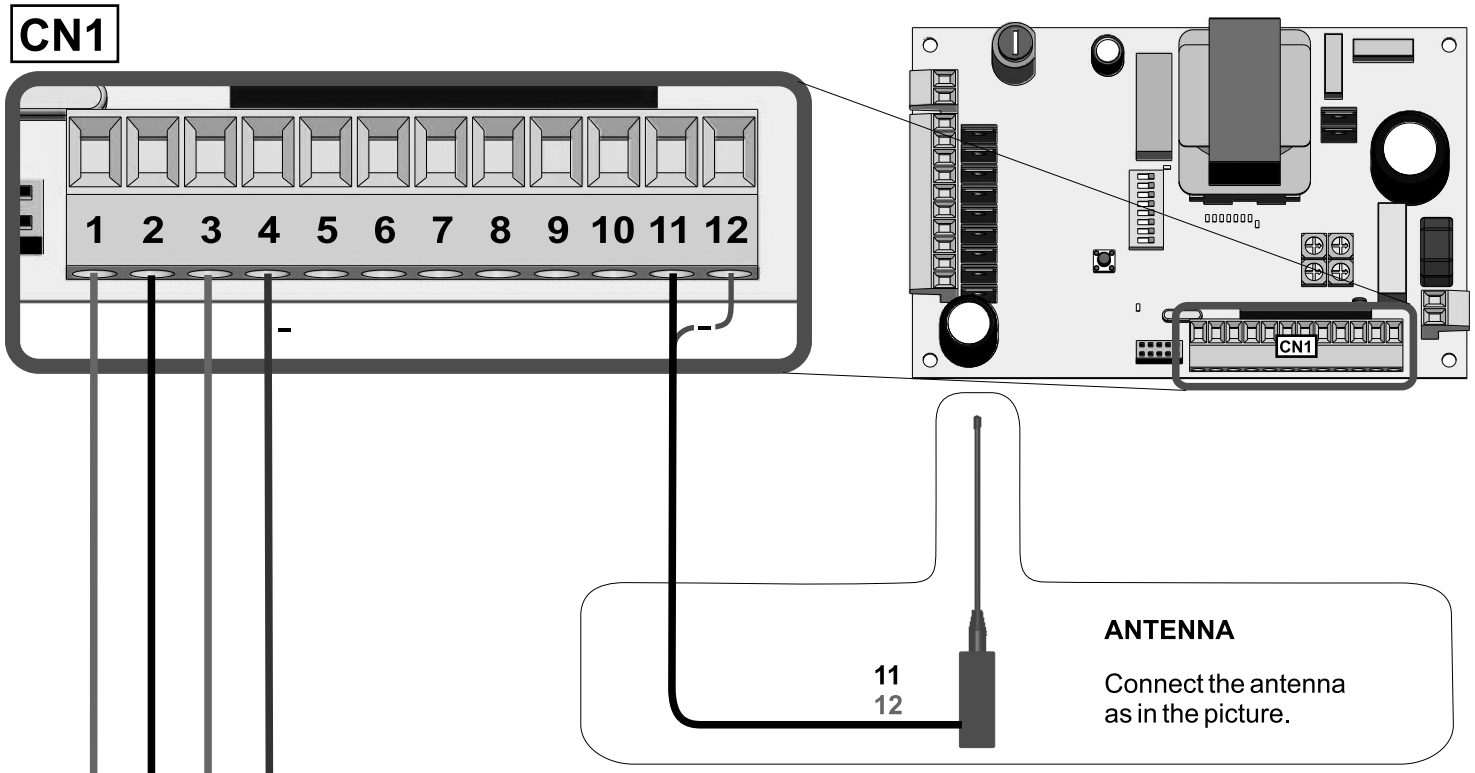
TECHNICAL CHARACTERISTICS

Control unit power supply	230V ~ (+6 -10%) - 50/60 Hz
Absorbt power	10 W
Max. motor charge	70 W x 2
Max. accessories charge	24Vdc 200mA
Max. Flash light charge	24Vdc 15W max.
Environment temperature	-20°C +50°C
Protection fuse (24V accessories)	1 (250mA)
Function logic	Automatic / Manual / Security / Dead man
Opening/closing time	In selflearning in programming phase
Time of pause	Adjustable with trimmer
Thrust	Adjustable with trimmer
Slow down	In selflearning in programming phase
Entries on connecting terminal	Battery power supply / Total opening /pedestrian opening / Security / Stop / limit switch opening and closing
Exit on connecting terminal	Power supply accessories 24Vdc / Motors 24Vdc / Flashing lamp 24Vdc / Electric lock 12Vdc / Power supply TX photocell
Board dimensions	156 x 100 mm
Characteristics optional batteries	24V Pb 2Ah min.
Characteristics of external enclosure	305 x 225 x 125 mm - Ip55

ARRANGEMENTS

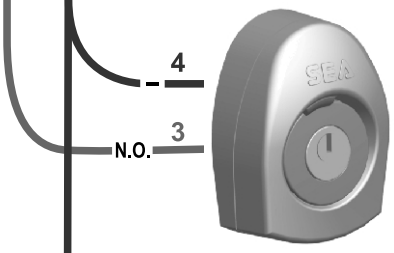
For the security of persons it is important to follow with attention all the advises and instructions in this manual. A wrong installation or a wrong use of the product can cause sever dammages to persons.
Make sure that the installation has an adeguate differential switch as prescribed by the law in force and local isolation at the control panel.
For the installation of the electric cables use adequate rigid and/or flexible ducts.
Always separate the connection cables of low voltage accessoires from those of 115/230V~ power supply. To avoid any interference use separate casings.
Max. Length of the power supply cable between control unit and motors is 10m, using cables with 2,5 mm^2 section.

START - STOP - PEDESTRIAN START - ANTENNA



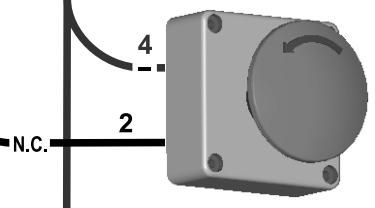
ANTENNA

Connect the antenna as in the picture.

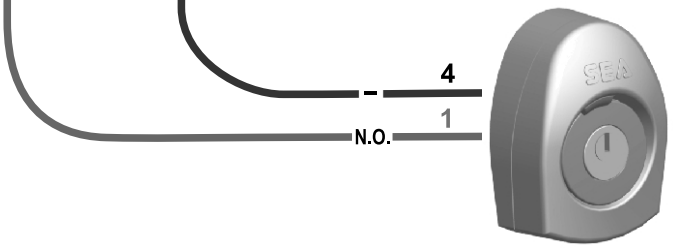


PEDESTRIAN START (N.O.)
To obtain a partial opening (only one leaf opening) connect the key-button wires as in the picture. It is possible to connect other command devices (push button board, radio receiver, keypad).

Note1: The contact for partial opening is a N.O. Contact (Normally open)
Note2: Partial opening will always operate the **M1** motor.



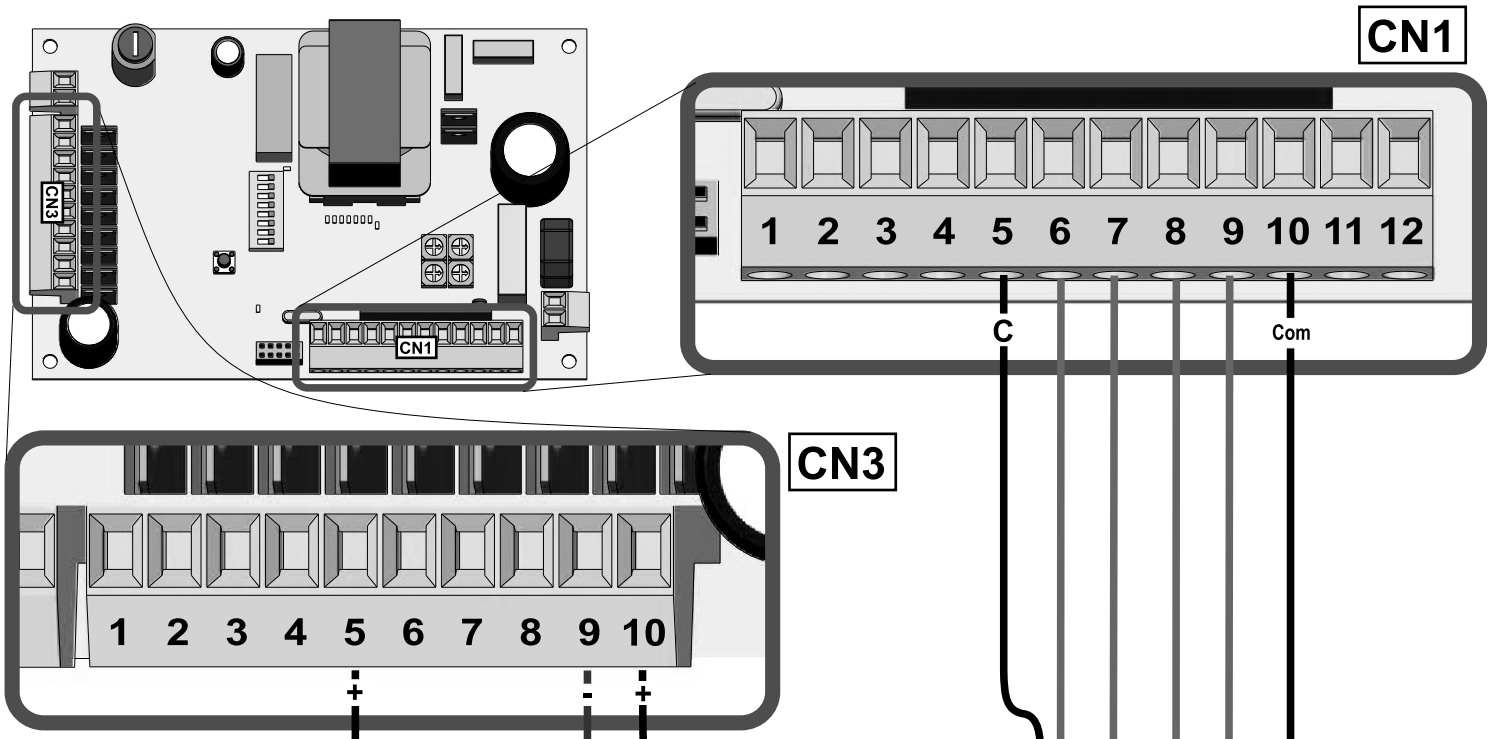
STOP (N.C.)
The pressure on this button immediately stops the motors in any condition /position. A start command is needed to re-start movement.
.
Notice: If stop button not used a link, make a jumper between terminals n° 2 and 10.



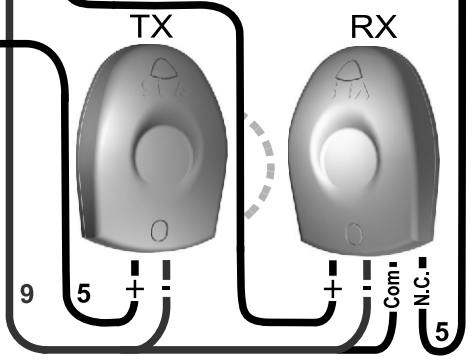
START (N.O.)
An impulse given to this contact opens and closes the automation depending on logic selected. It can be given by a key switch, a keypad, etc.

To connect the other devices refer to the related instructions leaflets. (ie. loop detectors and proximity switches)

PHOTOCELLS - LIMIT SWITCH

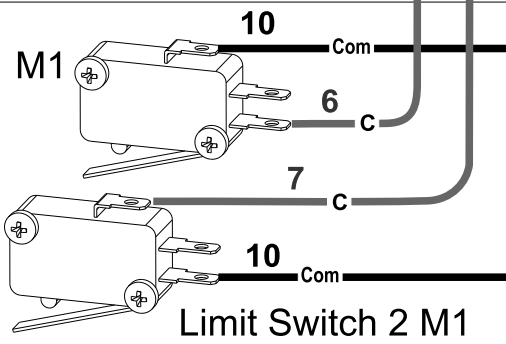


Photocells 1 Connection
When the photocells beam is crossed, the automation reverses its movement if in closing phase.
To use photocell self-testing, connect positive (+) to terminal 5 instead of 10 (CN3).
Notice: if the photocell is not used, make a Jumper between terminals 5 and 10 (CN1).
+ = 24Vdc - = 0Vdc C = Contact
Com = Common



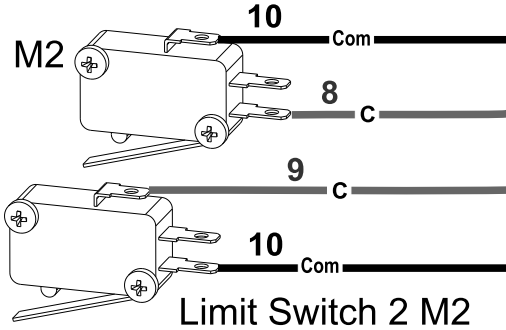
Limit Switches
They can be of different types:
- inductive limit switch
- mechanical limit switch with lever
- limit switch with spring
- limit switch for motor-reducer with chain.

All these limit switches must be manufactured by SEA for compatibility with the connectors
Com = Common
NOTE: If limits not used a link is required between terminal 6 to 10.

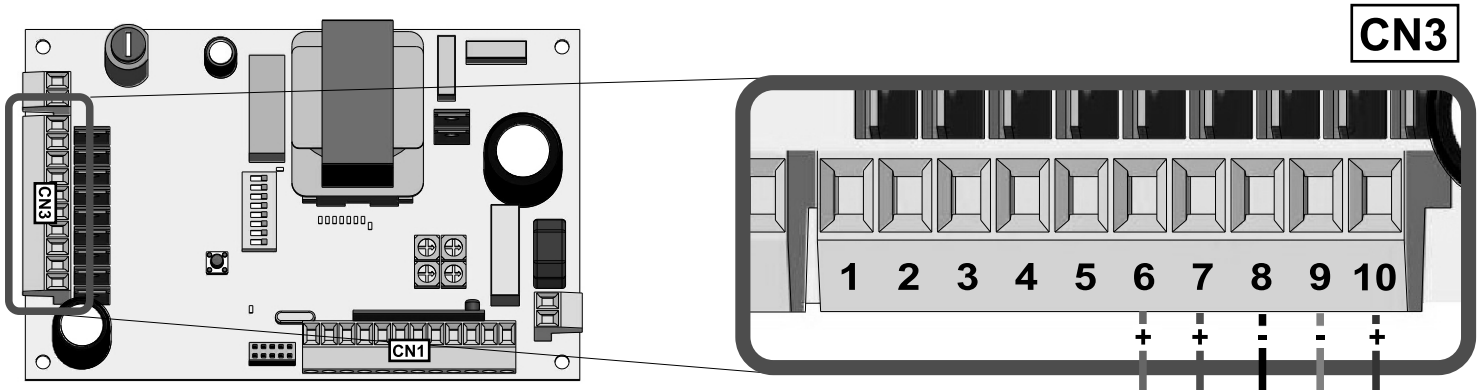


Limit Switches
They can be of different types:
- inductive limit switch
- mechanical limit switch with lever
- limit switch with spring
- limit switch for motor-reducer with chain.

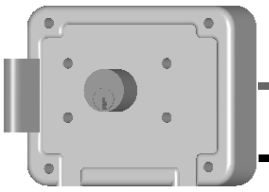
All these limit switches must be manufactured by SEA for compatibility with the connectors
Com = Common
N.B. If limits not used a link is required between terminal 8 to 10.



ELECTRIC LOCK - FLASHING LAMP - RECEIVER



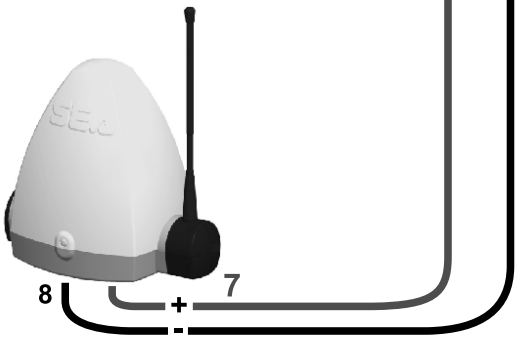
Electric lock exit
An electric lock of 12Vdc 15W max can be connected .
The electric lock activates at every opening cycle for about 1,5 sec.



Flashing Lamp 24V 15W

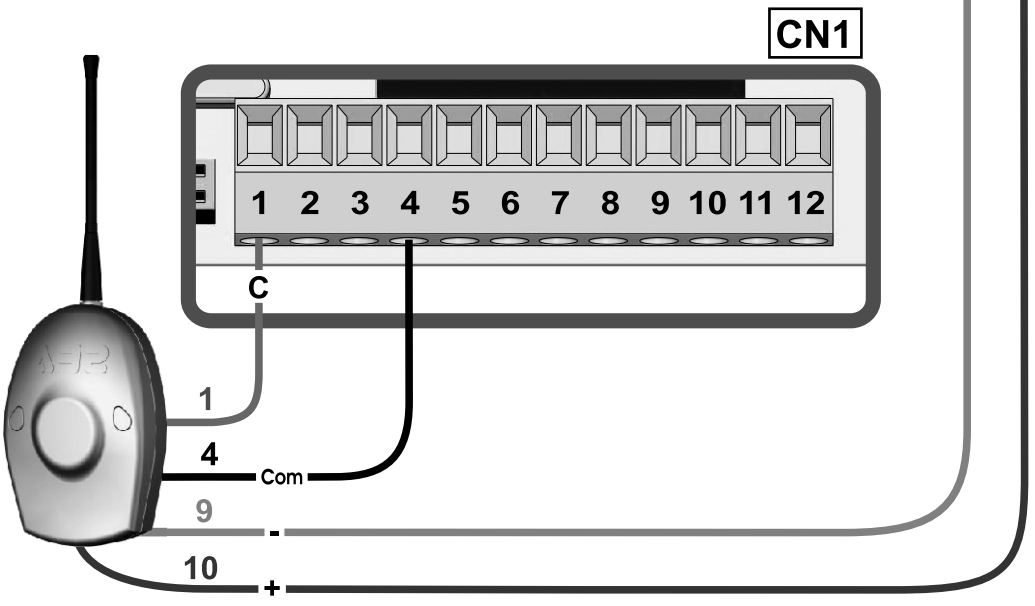
The flashing lamp gives warning that the gate is moving.
To connect, wire the flashing lamp as in the picture.

It is possible to activate a pre-flashing of 3 seconds (Dip 8 to ON position).

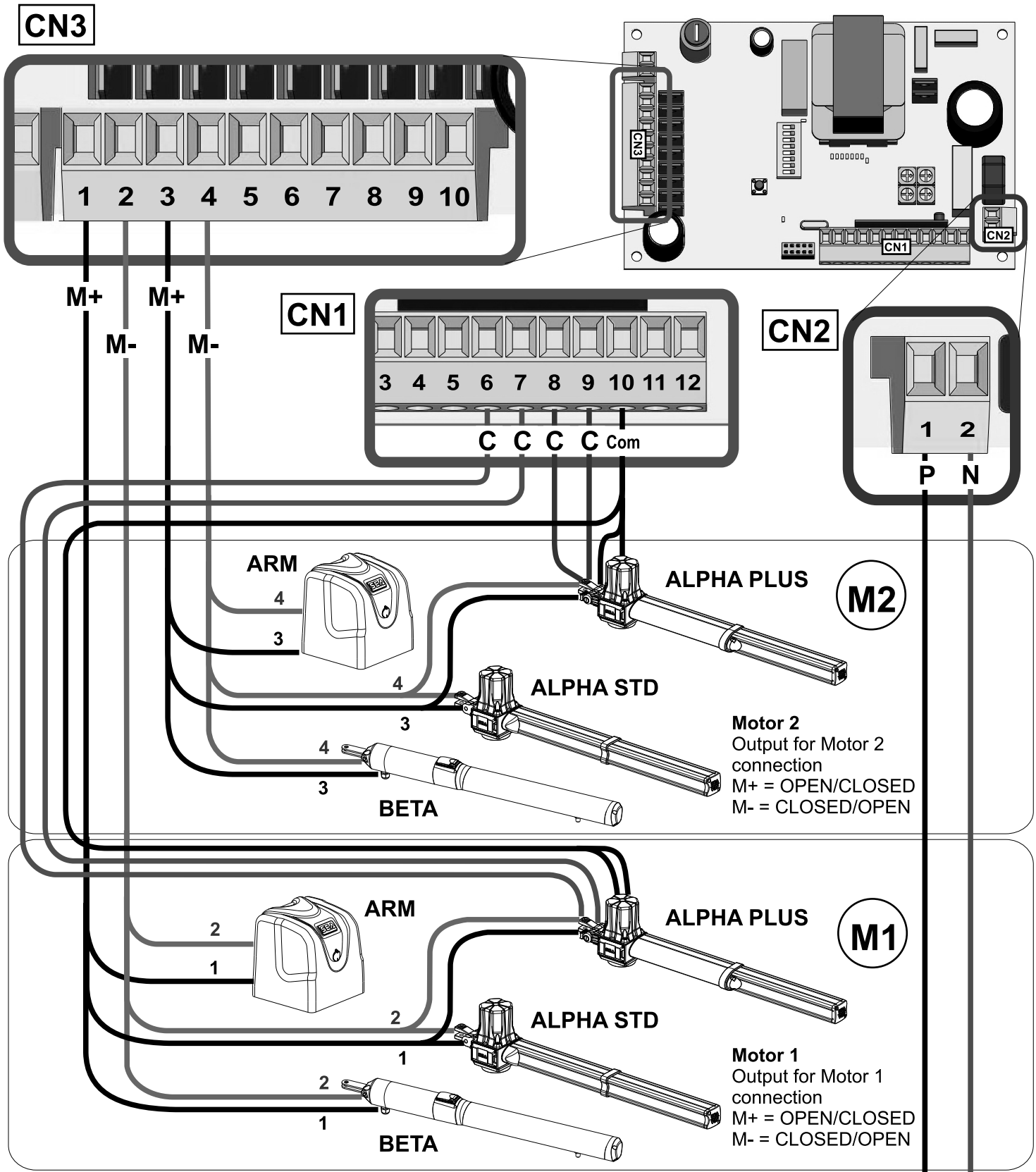


Connection of a radio receiver

This connection allows full opening/closing of the automation. For the receiver connection make reference to the related instruction manual.
+ = 24Vdc,
- = 0Vdc,
C = Contact
Com = Common

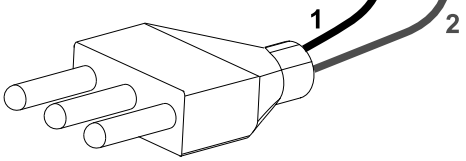


POWER SUPPLY - MOTORS ARM-ALPHA-BETA

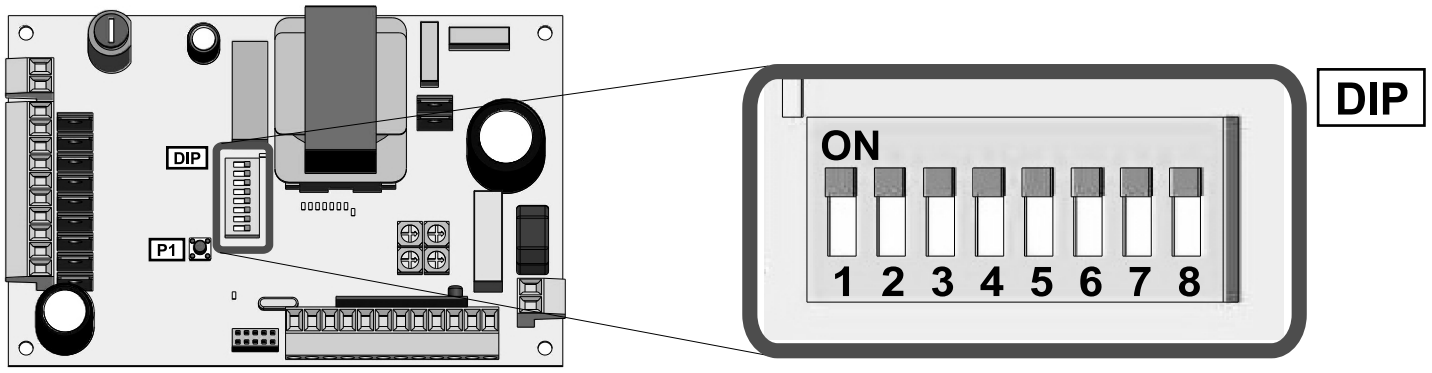


Power input
Input for the connection of the electric power.
P = PHASE - LIVE
N = NEUTRAL

NOTICE: for the connection to the electric power see the law in force.



DIP-SWITCH (TYPE OF RADIO TRANSMITTER)



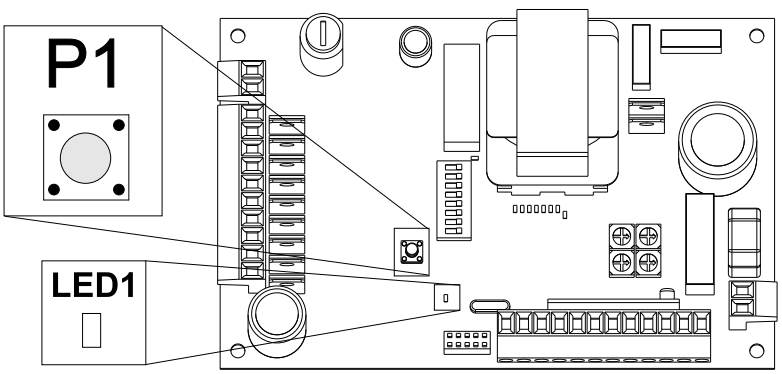
DIP	POSITION	SETTING DIP1 AND DIP2 ACCORDING TO THE TYPE OF RADIO TRANSMITTER USED
1 / 2	OFF / OFF	Radio transmitter **SMART Dip-switch** and/or radio transmitter **HEAD Dip-switch**
1 / 2	ON / OFF	Radio transmitter **SMART Rolling code** and/or radio transmitter **HEAD Rolling code**
2	ON	Radio transmitter **HEAD e-copy**
1 / 2	ON / ON	Erase the radio transmitter*

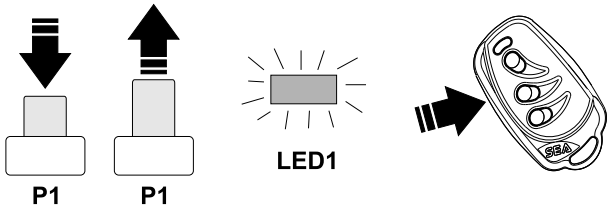
* Modality to erase learned radio transmitter.
Set the Dip 1 and 2 on ON.
Press and keep pressed P1 of the control unit for 10 seconds, the led will switch on to confirm the executed cancellation.
Bring back the dip-switches into the position regarding the typ of transmitter to be memorized.

RADIO TRANSMITTER SELF LEARNING

WARNING: make the radio transmitters programming before you connect the antenna.

1. Push and release P1 button, theLED 1 will flash in order to signal waiting for a code to be associated to the total opening.
2. Push the desired button on the radio transmitter, the LED will stay illuminated to signal the information has been saved.
3. Push and release P1 button, the LED1 will flash in order to signal waiting for a code to be associated with pedestrian opening.





4. .At this point you can push the radio transmitter button and the LED will switch off to signal learning end, or push P1 again and release if you don't want to match a button with the pedestrian function.

Notes:
- Enter radio transmitters learning only when the working cycle stops and the gate is closed.
- It's possible to memorize up to 10 codes (buttons).
- If you have already memorized all the possible codes, the next ones will overwrite the next to the last one (button No. 9 in order of receipt) if it must be matched with the total opening function, or the last one (button No. 10) if the received code must be associated to the pedestrian function.
- If the board receives a code which was already associated to another function it will be updated with the new function.

DIP-SWITCH (OTHER FUNCTIONS)

DIP	POSITION	PROGRAMMING OF OTHER DIPS FOR OTHER FUNCTIONS
3	ON	***INVERSION STROKE*** This function should only be used on swing gates, and is designed to assist the release of the electric lock. At the start impulse the motors are powered closed for 1 sec, before starting the opening cycle.
4	ON	***CONTROL OF PHOTOCELL IN OPENING*** The interruption of the photocell circuit stops movement, re- opening immediately on reinstatement.
5	ON	***PHOTOCELL SELFTEST*** If you activate this function it will start a test on the photocells before the gate begins to move. In order to use this function the photocells transmitters must be connected to the terminals No. 5 and No. 8 (Negative) of Cn3 connector.
8	ON	***PREFLASHING*** If you activate this function the flash and the pilot light start flashing approximately 5 seconds before motor starting up. Both in closing and in opening.

DIP-SWITCH (OPERATION MODE)

1. ATTENTION! With switched off control unit, considering the kind of gates (one or two motors), if there is or not a limit switch, select the operation mode using DIP 6 and 7program as below. When set proceed with self-learning.

DIP		POSITION	SETTING OF DIP6 AND DIP7 RESPECTIVELY THE DESIRED WORKING MODE
	6 / 7	OFF / OFF	Position to select the working mode: two motors with limit switch
	6 / 7	ON / OFF	Position to select the working mode: **only one leaf with limit switch (M1)**
	6 / 7	OFF / ON	Position to select the working mode: **two leaves without limit switch (see note)**
	6 / 7	ON / ON	Position to select the working mode: **only one leaf without limit switch (M1) (see note)**

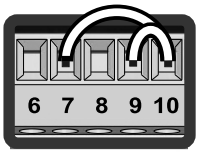
2. Switch on the board keeping push button P1 pressed pushbutton P1 of the board.

3. TheLED blinks slowly to confirm the memorisation of the operational mode.

4. Switch off the board and reset Dip 6 and 7 to OFF position.. Make the working times self learning as you can find explained in the next page.

Note:
To use the board without limit switch it is neccessary to bridge the limit switch inputs in closing with earth (only limit switch Clos.1 for the fucntion of one leaf, both for double leaves).

CN1



WORKING TIMES SELF LEARNING

1 Assure that each accessory (photocells, push buttons, and so on) works properly and adjust the leaf delay if necessary.

2 Adjust the self-learning speed with trimmer Rv2. It is recommended to set a low speed (not more then mid-run of the trimmer) and anyway sufficient to move the leaf without difficulty. The value of the adjusted speed will also determine the slow down speed.

3 Disconnect the power supply (Fig. 1), release the motors (Fig. 2-3) and put the leaves manually near the stop in closing (Fig. 4).Reset the mechanical lock (Fig. 5-6)

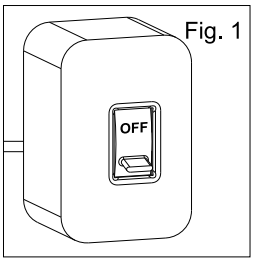


Fig. 1

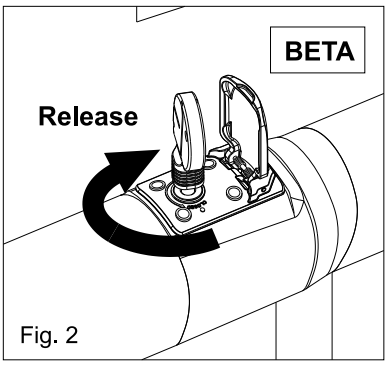


Fig. 2

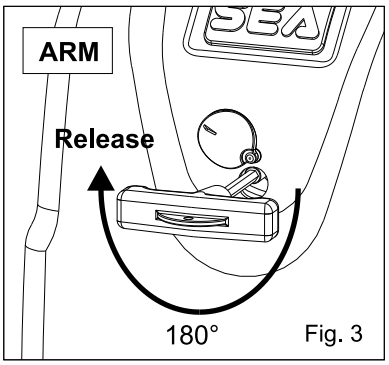


Fig. 3

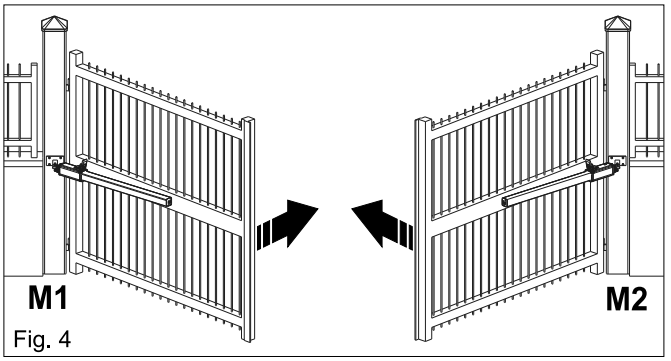


Fig. 4

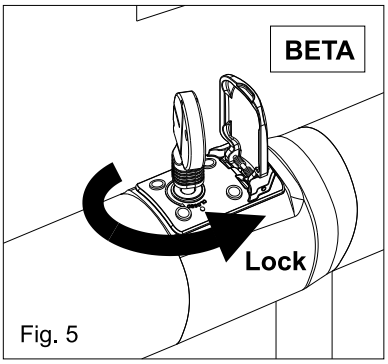


Fig. 5

Fig. 6

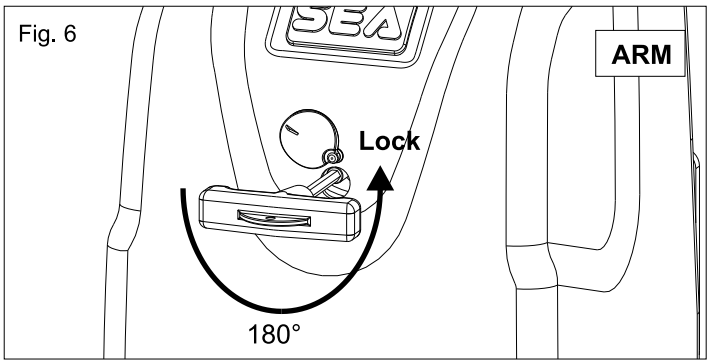
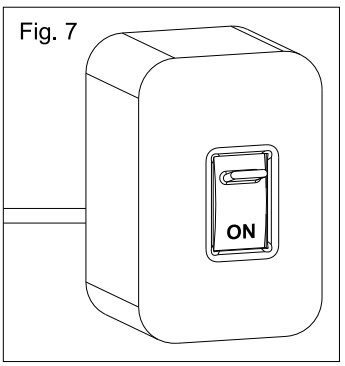
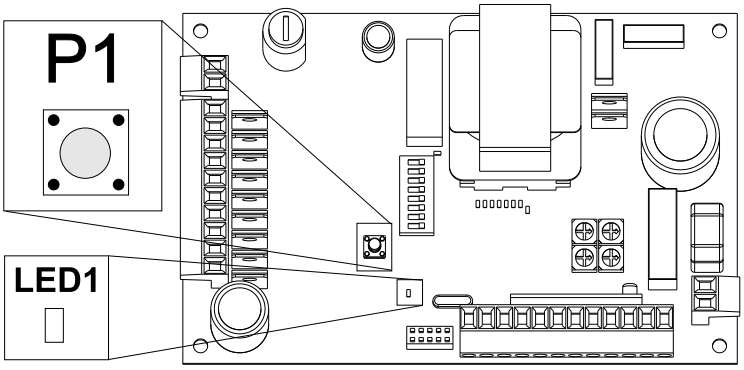


Fig. 7

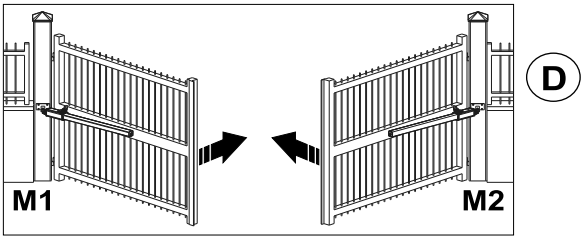


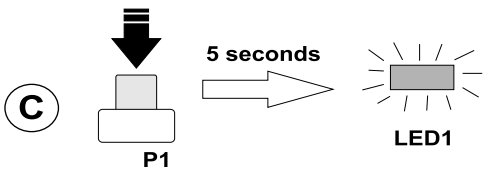
4 **A**)Put all the dip switches to OFF position.
B)Connect the control board to the power supply (Fig.**7**).
C)Push and keep pressed the button P1 for 5 seconds. Led1 switches on (Fig.**C**).
D) Both the leaves will start closing at the speed which has been set by Rv2 (Fig. D)
E) When the leaves have reached the stop they will automatically execute an opening cycle at lowered speed (Fig.**E**).
F) Wait until the leaves are completely open.
Led 1 switches off.

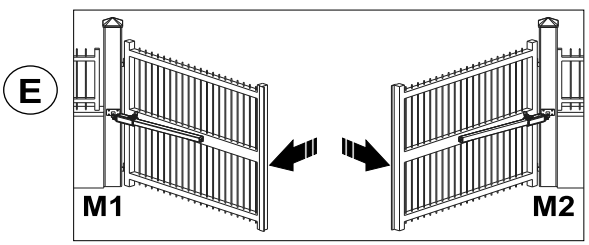


Self learning has finished. **F** ▭ **LED1**

G)Set the leaf speed with trimmer Rv2 (See pag. 13)
H) Wait for the pause time for the leaves reclosing.
I) Select the desired functioning logic following the instructions on the next page.

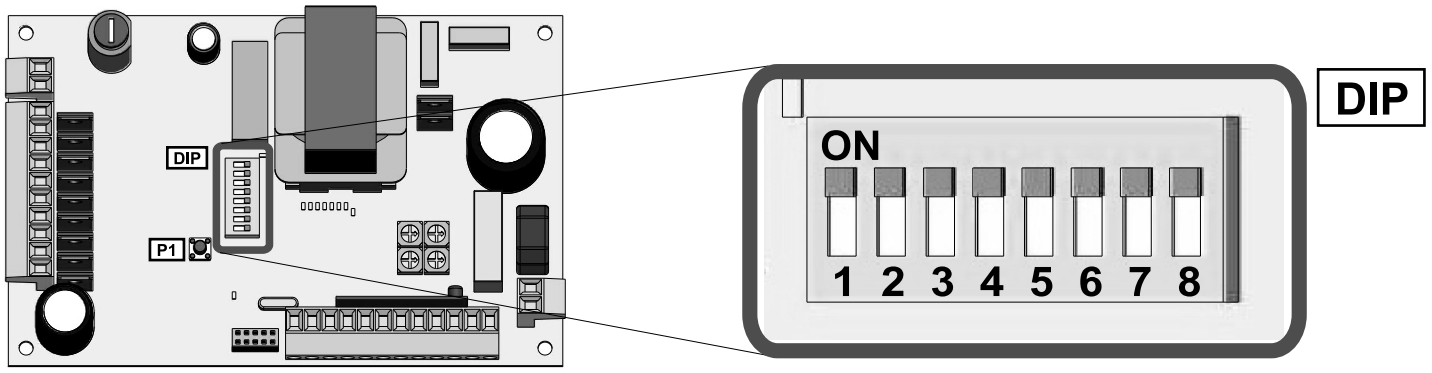






Note: the learning can be made only in automatic logic.

DIP-SWITCH (FUNCTION LOGIC)



MANUAL LOGIC
A start impulse opens the gate. A second impulse during opening stops the mouvement. A start impulse during closing reverses the movement.

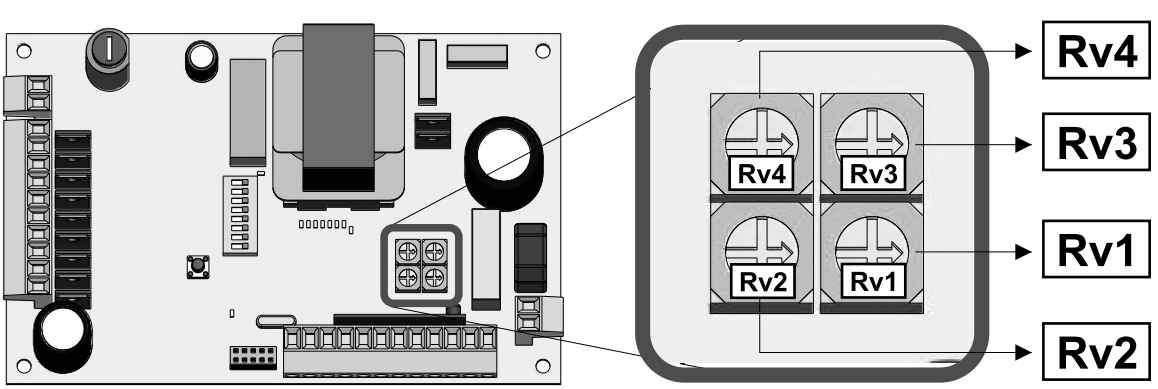
SECURITY LOGIC
A start impulse opens the gate. A second impulse during opening reverses the movement. A start impulse during closing reverses the movement.

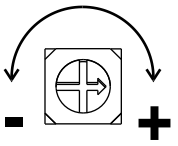
DEAD MAN LOGIC
The gate opens when the push button for opening is pressed and held (connectors 1 and 4 of CN1); releasing it stops the gate. The gate closes when the push button for closing is pressed and held(connectors 3 and 4 of CN1); releasing it stops the gate. To execute complete opening and/or closing cycles it is necessary to keep the relative push buttons constantly pressed.

AUTOMATIC LOGIC
A start impulse opens the gate. A second impluse during the opening will not be accepted. An impulse during the pause won't be accepted. An impulse during the closing reverses the movement.

DIP	*POSITION*	SETTING OF DIP6 AND DIP7 TO SELECT THE FUNCTION LOGIC
6 / 7	ON / ON	Position to select the function logic: **MANUAL**
6 / 7	ON / OFF	Position to select the function logic **SECURITY**
6 / 7	OFF / ON	Position to select the function logic: **DEAD MAN**
6 / 7	OFF / OFF	Position to select the function logic: **AUTOMATIC**

TRIMMER ADJUSTMENT





NOTE:
TURNE THE TRIMMER CLOCKWISE TIMES / VALUES INCREASE

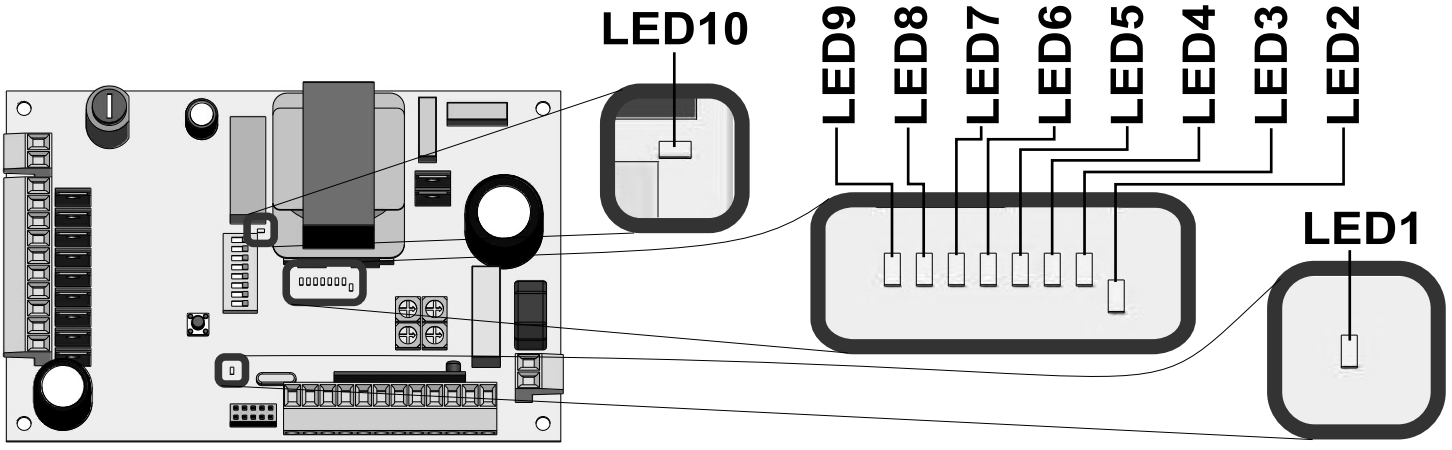
Rv1 ***SENSITIVITY ADJUSTMENT OF THE AMMETRIC SENSOR (anti squeezing)***
This adjustment must be made so to avoid the danger of squeezing of persons or things and must however respect the laws in force.
Position "+" = Max. Thrust (low sensibility)
Position "-" = Max. Thrust (high sensibility)

Rv2 ***MOTOR SPEED ADJUSTMENT***
This trimmer allows to adjust the motor speed. Furthermore, ONLY during the self-learning phase, it allows to adjust both the leaf speed during the programming of the control unit and the slow down speed.
This adjustment must be made to avoid the danger of squezzing of persons and things and must however respect the laws in force.

Rv3 ***ADJUSTMENT OF LEAF DELAY IN CLOSING***
This trimmer allows to adjust the dephasing of the leaves in closing from 0 to 112 sec.

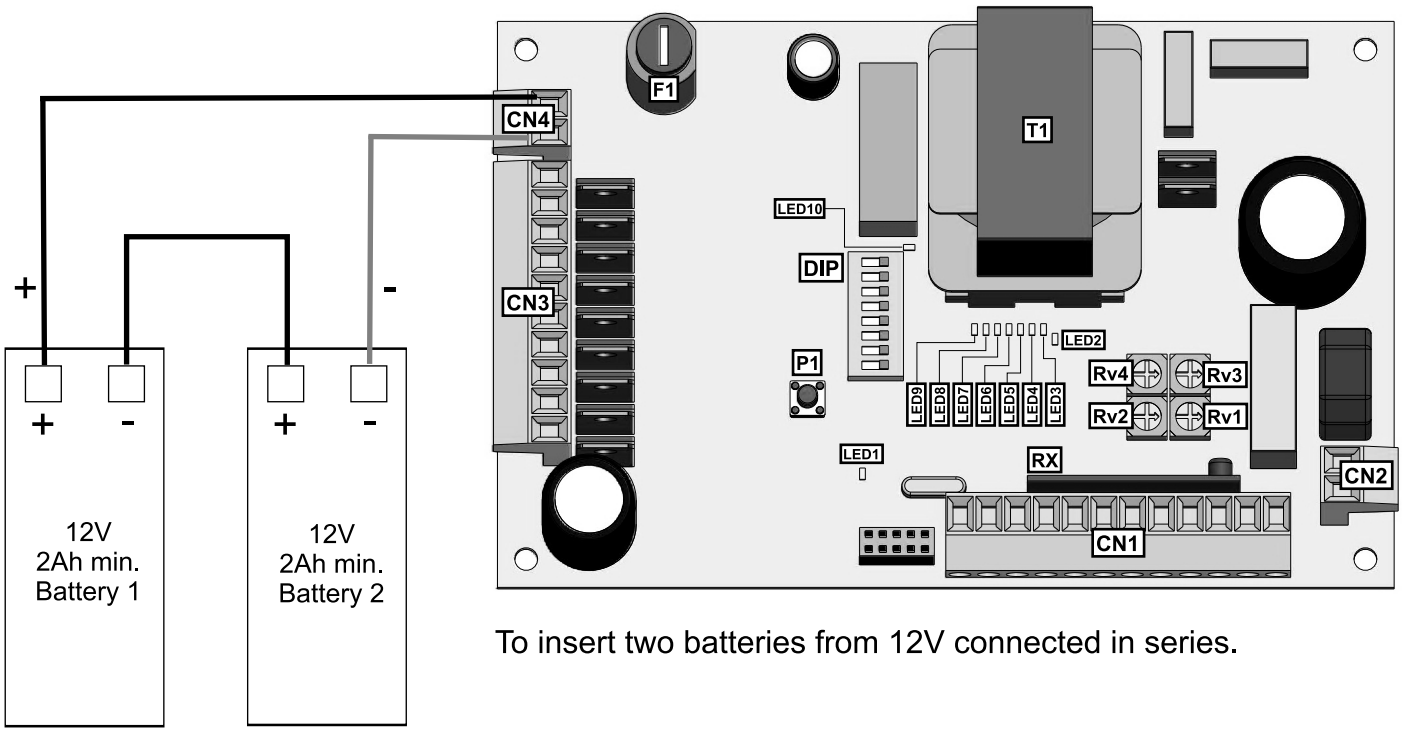
Rv4 ***TIME OF PAUSE ADJUSTMENT***
This trimmer allows the linear adjustment of the time of pause from 0 to 120 sec.

LED DESCRIPTION



LED1: Transmitter programming and self learning. Illuminates during transmitter programming and during the self learning working times system. It also signals the motors irregular absorption or the Mosfet breaking.
LED2: Photocell. Normally illuminated, switching off when the photocell is obscured.
LED3: *Start.* Normally switched off, illuminating when you give an opening impulse.
LED4: *Stop.* Normally illuminated, switching off when you give a stop impulse.
LED5: Pedestrians*tart.* Normally switched off, illuminating when you give a pedestrian opening impulse.
LED6 and LED7: Motor 1 opening and closing limit switch. Normally illuminated, switching off when the motor 1 limit switches are activated.
LED8 and LED9: Motor 2 opening and closing limit switch. Normally illuminated, switching off when the motor 2 limit switches are activated.
LED10: Power supply. Illuminated when the control panel is funtioning.

CONNECTION OF BATTERIES



To insert two batteries from 12V connected in series.

ALARMS INDICATIONS

Flashing sequence, spaced with a pause of 2 seconds, is shown both on the flash (for 45 seconds approximately) and on the pilot light (until a new START).

Flashings Number	Kind of alarm
2	Photocell
3	Photocell in opening

Flashings Number	Kind of alarm
4	Photocell Selftest
5	Stop

ALARM SIGNALS

1. Motors irregular current absorption or Mosfet breaking (ie. it fails the anticrushing safety).
LED L1 flashes quickly. In order to reset the board function you will need to disconnect the power supply.
In the case of failure due to Mosfet breaking and it is not possible to cancel the alarm you must replace the board.

2. Photocell self test alarm.It's required to push STOP. If the alarm keep working check or, if necessary, replace the photocells.

MAINTENANCE

Periodically, considering the number of working cycles and the kind of gate, it-s necessary to proceed, if the gate has changed the frictions and doesn-t work , with **learning times reprogramming on the electronic control unit.**

TROUBLE SHOOTING

Advises

Make sure all Safety LED are turned ON
All not-used N.C. contacts must have jumpers

Problem Found	Possibile Cause	Solution
Motor doesn't respond to any START impulse	**a.)** Jumper missing on one of the N.C. Contacts **b.)** Burnt fuse	**a.)** Check connections or jumpers on contacts 2/10 on the CN2, 5/10 on the CN1 Cn1 **b.)** Replace burnt fuse on the board
Gate doesn't move while the motor is running	**a.)** The motor is in the released position **b.)** The electronic clutch are not set **c.)** There is an obstacle	**a.)** Re-lock the motor **b.)** Adjust electronic clutch using Trimmer Rv1 and Rv2 **c.)** Remove obstacle
Gate doesn't reach the complete Open / Closed position	**a.)** Wrong setting of the limit switches **b.)** Error on programming (page 13) **c.)** Gate is stopped by an obstacle **d.)** The fitting geometry is inadequate	**a.)** Set limit switches **b.)** Repeat programming as on page 13 **c.)** Remove obstacle **d.)** Check fitting geometry following the operator installation manual
The gate opens but doesn't close	**a.)** The photocell contacts 2/10 and 5/10 are not closed	**a.)** Check LED and jumpers
The gate doesn't close automatically	**a.)** Pause time set to high	**a.)** Adjust pause time using Trimmer Rv4

P.N.
Every time an adjustment is made reset the board turning OFF the power for 10 seconds and then turn it back ON.

WARNINGS AND WARRANTY

WARNINGS
The electric installation and the functioning logic choice must agree with the laws in force. In any case you must foresee a 16A and threshold 0.030A differential switch. Keep the power cables (motors, power supply) separate from the command cables (push buttons, photocells and so on). In order to avoid any interference it's preferable to use two separate cables and ducts

REPLACEMENTS
Any request for spare parts must be sent to:
SEA s.r.l. - Zona Ind.le, 64020 S.ATTO - Teramo - Italia

USE DESTINATION
The electronic equipment 23001135 has been designed to be used exclusively as management equipment for sliding gates automation, swing gates, sectional doors, overhead doors, barriers.

SAFETY AND ENVIRONMENTAL COMPATIBILITY
Disposal of the packaging materials of products and/or circuits should take place in an approved disposal facility.

REGULAR PRODUCT DISPOSAL (electric and electronic waste)

(It's applicable in EU countries and in those ones provided with a differential rubbish collection)

The brand that you find on the product or on documentation signals that the product must not be disposed off together with other domestic rubbish at the end of life cycle. In order to avoid any possible environmental or health damage because of the irregular waste disposal, we ask you to separate this product from other forms of rubbish and to recycle it in a responsible way in order to provide the sustainable re-use of material resources. Domestic users are invited to contact the retailer where the product has been purchased or the local office in charge of all the information related to differential collection and recycling of this kind of product.

STORING

WAREHOUSING TEMPERATURES			
T_{min}	T_{Max}	$Dampness_{min}$	$Dampness_{Max}$
- 40°C	+ 85°C	*5% Not condensing*	*90% Not condensing*

Materials handling must be made with appropriate vehicles..

REPLACEMENT AND MAINTENANCE
The replacement and/or putting out of service and/or maintenance of the electronic equipment 23001135 must be made only and exclusively by authorised and qualified staff.

WARRANTY LIMITS
The warranty form of the electronic equipment 23001135 is valid for 24 months starting from the printed date on the product. The mentioned product will be considered under warranty if it doesn't show any damage caused by an irregular use or by any modification or breaking. The warranty is valid only for the original buyer.

NOTE:THE MANUFACTURER IS NOT CONSIDERED RESPONSIBLE FOR ANY DAMAGE CAUSED BY IRREGULAR, WRONG OR UNREASONABLE USE.

SEA reserves the right to make any required modification or change to the products and/or to this manual without any advanced notice obligation.
