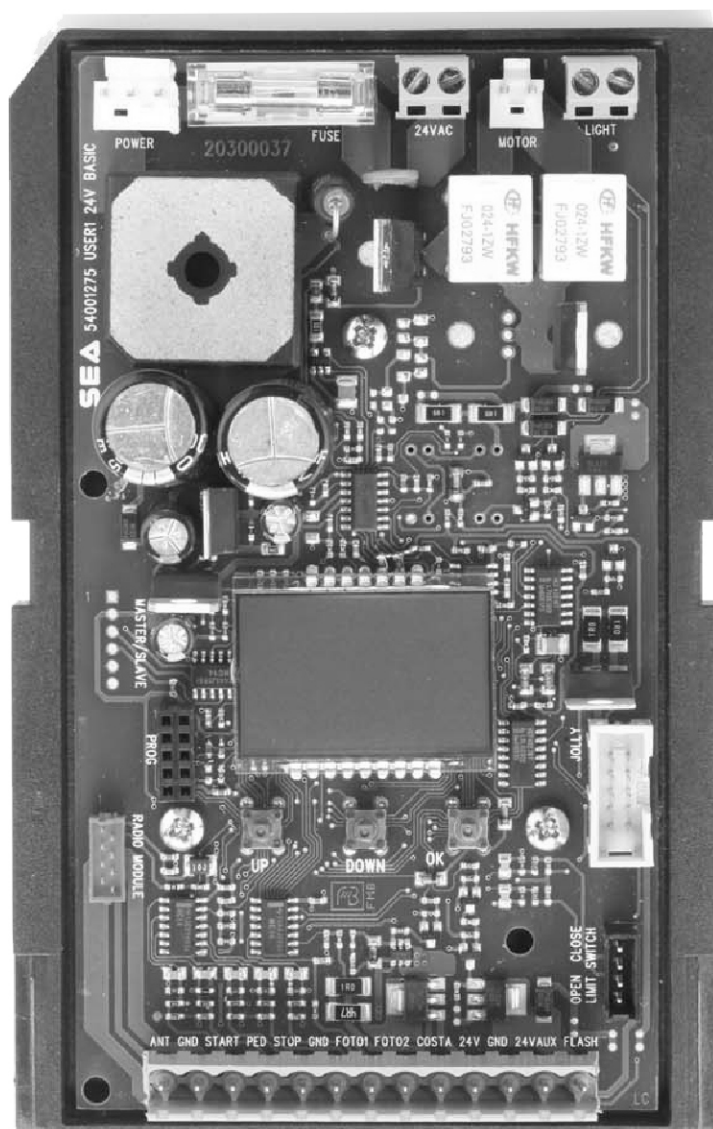




**SEA<sup>®</sup>** USA  
ELECTRONIC  
OPENING  
SYSTEMS  
International registered trademark n. 2.777.971

## **USER 1 - 24V DG**

**24V === ELECTRONIC CONTROL UNIT FOR SLIDING GATES AND BARRIERS**



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## Details

### General

An appliance shall be provided with an instruction manual. The instruction manual shall give instructions for the installation, operation, and user maintenance of the appliance.

The installation instructions shall specify the need for a grounding-type receptacle for connection to the supply and shall stress the importance of proper grounding.

The installation instructions shall inform the installer that permanent wiring is to be employed as required by local codes, and instructions for conversion to permanent wiring shall be supplied.

Information shall be supplied with a gate operator for:

- a) The required installation and adjustment of all devices and systems to effect the primary and secondary protection against entrapment (where included with the operator).
- b) The intended connections for all devices and systems to effect the primary and secondary protection against entrapment. The information shall be supplied in the instruction manual, wiring diagrams, separate instructions, or the equivalent.

### Vehicular gate operators (or systems)

A vehicular gate operator shall be provided with the information in the instruction manual that defines the different vehicular gate operator Class categories and give examples of each usage. The manual shall also indicate the use for which the particular unit is intended as defined in Glossary, Section 3. The installation instructions for vehicular gate operators shall include information on the Types of gate for which the gate operator is intended.

A gate operator shall be provided with the specific instructions describing all user adjustments required for proper operation of the gate. Detailed instructions shall be provided regarding user adjustment of any clutch or pressure relief adjustments provided. The instructions shall also indicate the need for periodic checking and adjustment by a qualified technician of the control mechanism for force, speed, and sensitivity.

Instructions for the installation, adjustment, and wiring of external controls and devices serving as required protection against entrapment shall be provided with the operator when such controls are shipped with the operator.

Instructions regarding intended installation of the gate operator shall be supplied as part of the installation instructions or as a separate document. The following instructions or the equivalent shall be supplied where applicable:

- a) Install the gate operator only when:
  - 1) The operator is appropriate for the construction of the gate and the usage Class of the gate,
  - 2) All openings of a horizontal slide gate are guarded or screened from the bottom of the gate to a minimum of 4 feet (1.22 m) above the ground to prevent a 2-1/4 inch (57.2 mm) diameter sphere from passing through the openings anywhere in the gate, and in that portion of the adjacent fence that the gate covers in the open position,
  - 3) All exposed pinch points are eliminated or guarded, and
  - 4) Guarding is supplied for exposed rollers.
- b) The operator is intended for installation only on gates used for vehicles. Pedestrians must be supplied with a separate access opening. The pedestrian access opening shall be designed to promote pedestrian usage. Locate the gate such that persons will not come in contact with the vehicular gate during the entire path of travel of the vehicular gate.
- c) The gate must be installed in a location so that enough clearance is supplied between the gate and adjacent structures when opening and closing to reduce the risk of entrapment. Swinging gates shall not open into public access areas.
- d) The gate must be properly installed and work freely in both directions prior to the installation of the gate operator. Do not over-tighten the operator clutch or pressure relief valve to compensate for a damaged gate.
- e) (not applicable)
- f) Controls intended for user activation must be located at least six feet (6') away from any moving part of the gate and where the user is prevented from reaching over, under, around or through the gate to operate the controls. Outdoor or easily accessible controls shall have a security feature to prevent unauthorized use.



g) The Stop and/or Reset button must be located in the line-of-sight of the gate. Activation of the reset control shall not cause the operator to start.

h) A minimum of two (2) WARNING SIGNS shall be installed, one on each side of the gate where easily visible.

i) For gate operators utilizing a non-contact sensor:

- 1) See instructions on the placement of non-contact sensors for each Type of application,
- 2) Care shall be exercised to reduce the risk of nuisance tripping, such as when a vehicle, trips the sensor while the gate is still moving, and
- 3) One or more non-contact sensors shall be located where the risk of entrapment or obstruction exists, such as the perimeter reachable by a moving gate or barrier.

j) For a gate operator utilizing a contact sensor:

- 1) One or more contact sensors shall be located where the risk of entrapment or obstruction exists, such as at the leading edge, trailing edge, and postmounted both inside and outside of a vehicular horizontal slide gate.
- 2) One or more contact sensors shall be located at the bottom edge of a vehicular vertical lift gate.
- 3) One or more contact sensors shall be located at the pinch point of a vehicular vertical pivot gate.
- 4) A hardwired contact sensor shall be located and its wiring arranged so that the communication between the sensor and the gate operator is not subjected to mechanical damage.
- 5) A wireless contact sensor such as one that transmits radio frequency (RF) signals to the gate operator for entrapment protection functions shall be located where the transmission of the signals are not obstructed or impeded by building structures, natural landscaping or similar obstruction. A wireless contact sensor shall function under the intended end-use conditions.
- 6) One or more contact sensors shall be located on the inside and outside leading edge of a swing gate. Additionally, if the bottom edge of a swing gate is greater than 6 inches (152 mm) above the ground at any point in its arc of travel, one or more contact sensors shall be located on the bottom edge.
- 7) One or more contact sensors shall be located at the bottom edge of a vertical barrier (arm).

Revised 56.8.4 effective February 21, 2008

Instruction regarding intended operation of the gate operator shall be provided as part of the user instructions or as a separate document. The following instructions or the equivalent shall be provided:

**IMPORTANT SAFETY INSTRUCTIONS**

**WARNING** – To reduce the risk of injury or death:

1. READ AND FOLLOW ALL INSTRUCTIONS.

2. Never let children operate or play with gate controls. Keep the remote control away from children.

3. Always keep people and objects away from the gate. NO ONE SHOULD CROSS THE PATH OF THE MOVING GATE.

4. Test the gate operator monthly. The gate MUST reverse on contact with a rigid object or stop when an object activates the non-contact sensors. After adjusting the force or the limit of travel, retest the gate operator. Failure to adjust and retest the gate operator properly can increase the risk of injury or death.

5. Use the emergency release only when the gate is not moving.

6. KEEP GATES PROPERLY MAINTAINED. Read the owner's manual. Have a qualified service person make repairs to gate hardware.

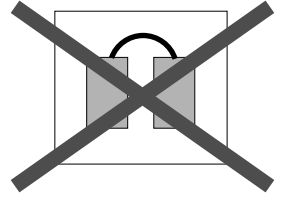
7. The entrance is for vehicles only. Pedestrians must use separate entrance.

8. SAVE THESE INSTRUCTIONS.

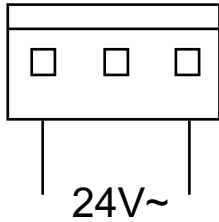


## CONNECTIONS

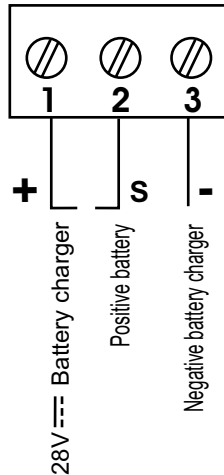
**WARNING:** The control unit is designed with the automatic detection of not used N.C. inputs (photocells, Stop and Limit switch) except the SAFETYEDGE input.



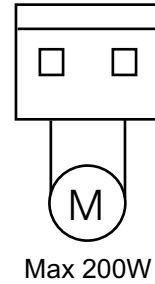
**POWER (CN8)**



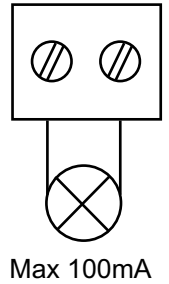
**CN7**



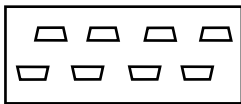
**MOTOR (CN6)**



**LIGHT (CN5)**

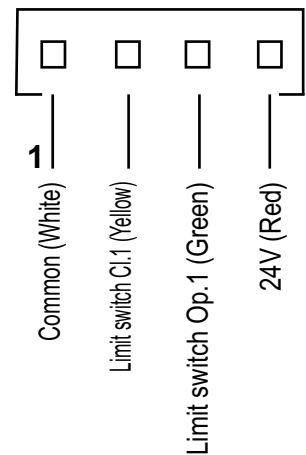


**RADIO MODULE (CNA)**

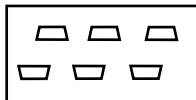


Receiver module connector

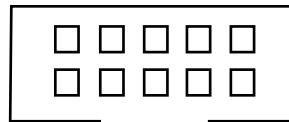
**LIMIT SWITCH (CN2)**



**MASTER / SLAVE (CN4)**

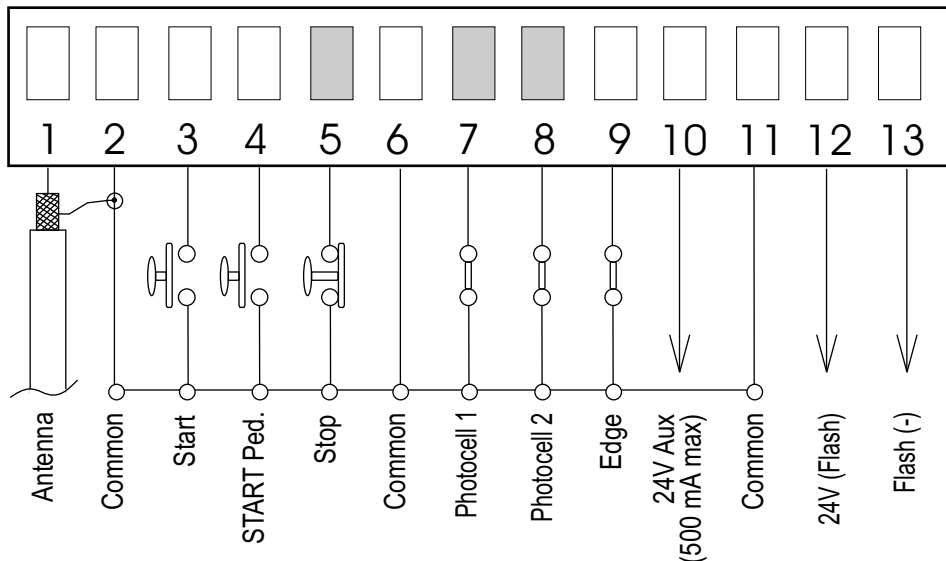


**JOLLY (CN3)**



Connector Programmer Jolly

**CN1**



**NOTE:** When using magnetic limit switches consider the respective inputs as N.O.

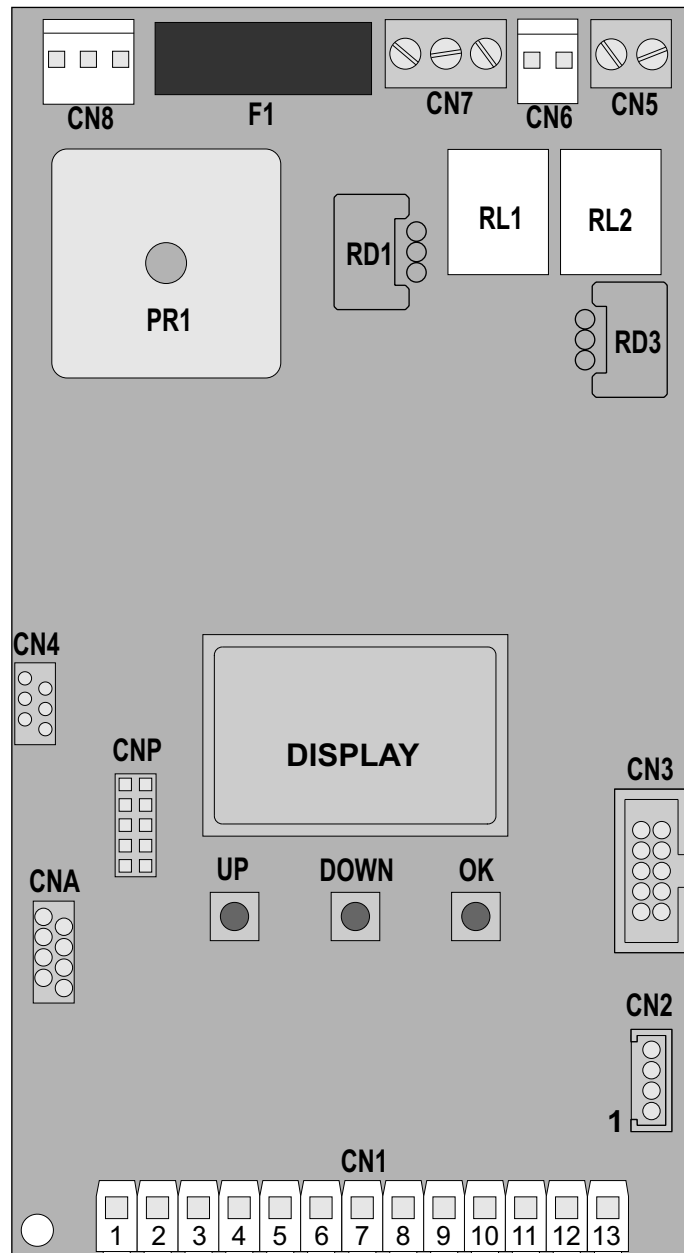


## **INDEX**

DESCRIPTION OF COMPONENTS .....	6
GENERAL INFORMATION .....	7
QUICK START .....	8
SELFLEARNING WORKING TIME .....	9
SELECTION OF SETTINGS .....	10
RADIO TRANSMITTER LEARNING .....	15
TRANSMITTERS CANCELLATION .....	15
WORKING LOGICS .....	16
PASSWORD ENTERING MANAGEMENT .....	16
JOLLY PROGRAMMER PARAMETER SETTING .....	17
START, STOP, PEDESTRIAN START, ANTENNA, PHOTOCCELL CONNECTIONS .....	19
LIMIT SWITCH, SENSOR BARRIERS .....	20
ALARM DESCRIPTION .....	20
POWER SUPPLY, MOTOR CONNECTION, EDGE, BUZZER AND EXTERNAL RECEIVER ...	21
MASTER-SLAVE FUNCTION .....	22
BATTERY CONNECTION .....	22
TROUBLE SHOOTING .....	23
WARNING, MAINTENANCE AND WARRANTY .....	23



## **DESCRIPTION OF THE COMPONENTS**



**CN1** = Input/Output connector  
**CN2** = Limit switch connector  
**CN3** = Jolly connector  
**CN4** = Master/slave connector  
**CN5** = Courtesy light output plug  
**CN6** = Motors connector  
**CN7** = Batteries connector  
**CN8** = Power connector  
**CNA** = Receiver connector  
**CNP** = Programming connector

**OK** = Programming button  
**DOWN** = Programming button  
**UP** = Programming button  
**RD1** = Motors piloting Mosfet  
**RD3** = Motors piloting Mosfet  
**RL1** = Motors command relay  
**RL2** = Motors command relay  
**PR1** = Rectifier jumper  
**F1** = Fuse 6.3 AT



## **GENERAL INFORMATION**

*The information in this section of the manual are only for technicians or for qualified or authorized installers.*

### **GENERAL CHARACTERISTICS**

The USER 1 24V DG control unit has been designed to manage one low voltage motor with or without electronic limit switches.

It is of very small size and the big news is the LCD display on board that let you view and set in a simple and complete way all functions of the control unit.

### **TECHNICAL SPECIFICATIONS**

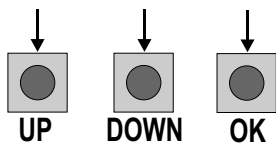
<b>Control unit power supply</b>	24 V~
<b>Absorption in stand by</b>	30 mA
<b>Max. motor charge</b>	200W
<b>Max. accessories charge 24V</b>	24V=== 250mA
<b>Max. Flash light charge</b>	24V (FL) 15W max.
<b>Environment temperature</b>	-20°C ↓ +50°C ↓
<b>Protection 24V~</b>	F1 (6.3 AT)
<b>Function logic</b>	Automatic/S.by Step1/S.By Step2/Sec./Dead man/2Butt.
<b>Opening/closing time</b>	In selflearning in programming phase
<b>Time of pause</b>	Adjustable (from 15s to 4 min)
<b>Thrust</b>	Adjustable Opening and Closing
<b>Slow down</b>	Adjustable Opening and Closing
<b>Input on connecting terminal</b>	Battery power supply / Total opening / Pedestrian opening adjustable / Balanceable edge / Stop / Limit switch opening and closing / Photocell 1 and Photocell 2
<b>Output on connecting terminal</b>	24V(FL)=== / Light === (Max 100 mA) / Motor 24V=== / 24Vaux ===
<b>Board dimensions</b>	156 x 100 mm
<b>Specifications of optional batteries</b>	24V Pb 1.2Ah min.
<b>Specifications of external enclosure</b>	305 x 225 x 125 mm - Ip55
<b>Special accessories</b>	Battery charger card (cod.23101105), Programmer JOLLY (cod.23105276), Programmer OPEN (cod.23105290)

**The herein reported functions are available starting from revision 24.**



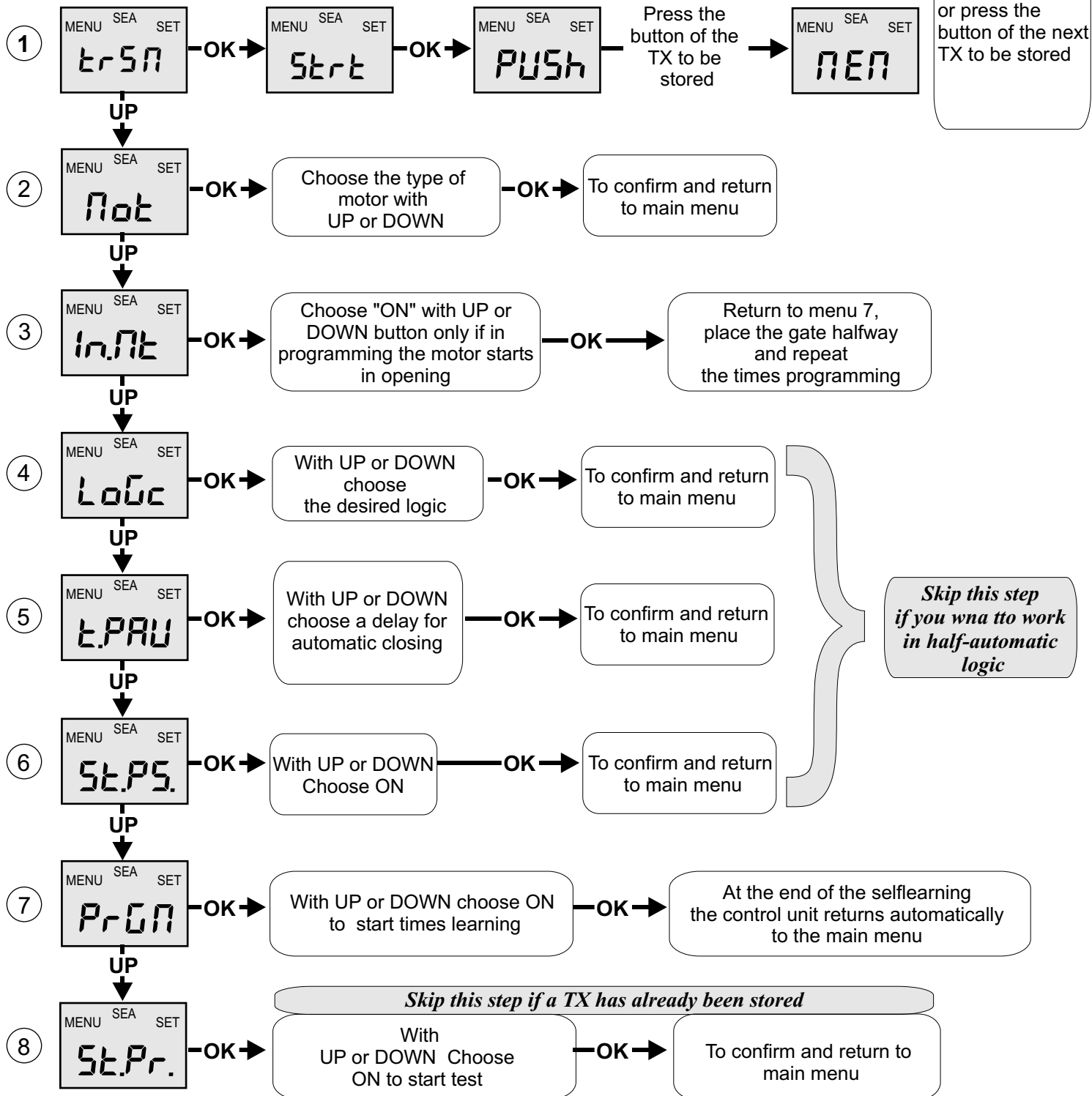


# QUICK START

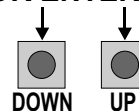


## PROGRAMMING BUTTONS

*Skip this step if you do not want to program a transmitter*



ALL OTHER PARAMETERS HAVE DEFAULT SETTINGS WHICH ARE USEFUL FOR THE 90% OF THE APPLICATIONS BUT CAN BE HOWEVER SET THROUGH THE SPECIAL MENU. FOR ENTERING INTO THE SPECIAL MENU PRESS THE UP AND DOWN BUTTONS AT THE SAME TIME FOR 5 S.







## **WORKING TIMES SELF LEARNING**

**NOTE:** When using a B200 motor or magnetic limit switches in general; make sure that the control unit is set on magnetic limit switch before learning;  
**MENU SANC**

**Note1:** Put a jumper on SAFETY EDGE contact if not used.

**Note2:** It is not necessary to put a jumper on the limit switches, photocells and Stop if they are not used.

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

2) Connect the control board to the power supply (Fig.6).

3) Select on the on-board display or JOLLY programmer, the type of motor that you are using as indicated in the display administration.

4) Set the motor torque, the working speed, the deceleration and acceleration space and the slowdown speed. If necessary also set the working logic and the other parameters.

5) Select *Prac* on the display, press OK and then one of the UP or DOWN buttons. Now the gate will automatically execute a closing, opening and reclosing cycle.

**Note:** If the motor starts in opening, remove and re-put power supply, select on the display *In It*. And through the UP and DOWN button put it on ON, or if you have the Jolly programmer, activate the motor and limit switch exchange function. If the motor starts in closing and stops, remove the power supply and reverse the motor cables, then repeat starting from point 5.

6) The self-learning is done.

**ATTENTION:** This procedure is potentially dangerous and should only be performed by qualified personnel in safety conditions.

**The control unit is pre-set with the default settings, to start the control unit with the DEFAULT settings just keep pressed the UP and DOWN buttons at the same time power supplying the control unit the display shows the message *In It*.**

**The DEFAULT settings are shown in the Menues table.**

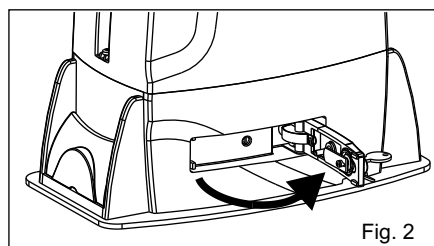
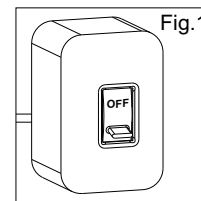


Fig. 2

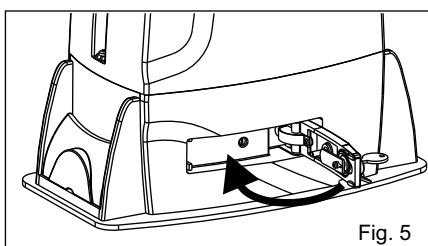


Fig. 5

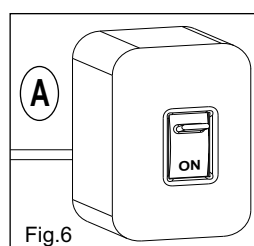


Fig. 6

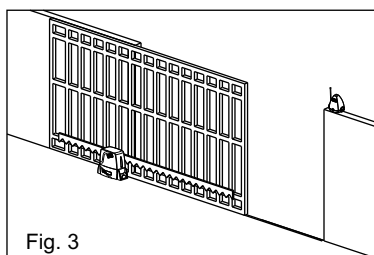


Fig. 3

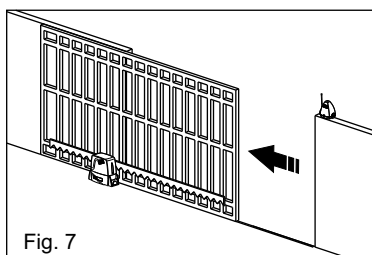


Fig. 7

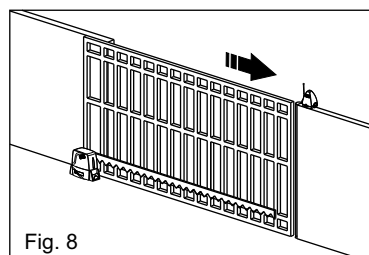


Fig. 8

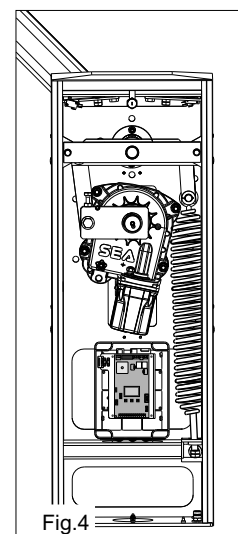


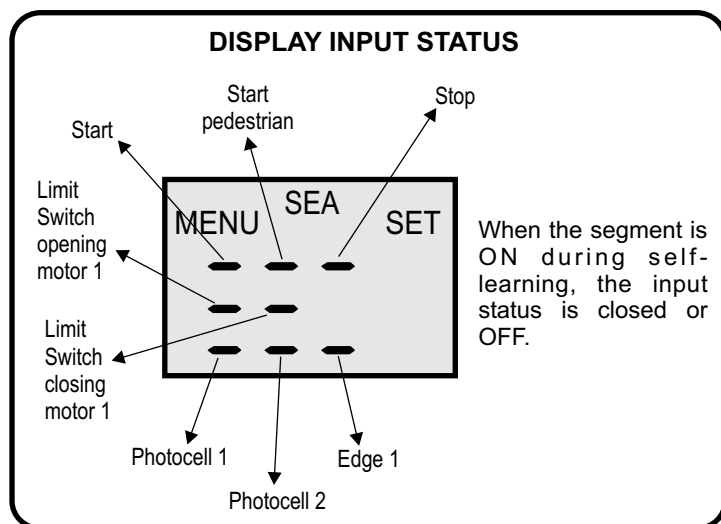
Fig. 4



## SELECTION OF THE SETTINGS

The settings of the control unit are made through the UP, DOWN and OK buttons. The UP and DOWN buttons to scroll through the MENUS and SUBMENUS. By pressing OK you enter from MENU into SUBMENU and confirm the choice.

Pressing the UP and DOWN buttons at the same time you access the SP MENU for special settings. Pressing the OK button for 5 seconds, you enter the TEST MENU, where you can check the operating status of all inputs.

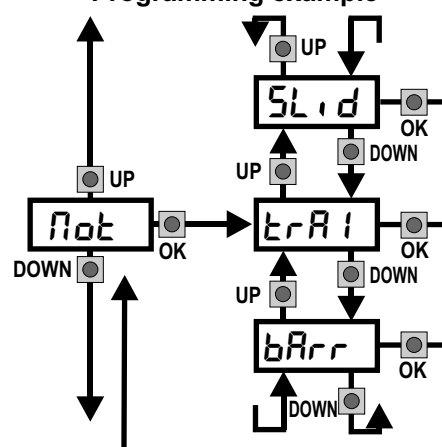


Initial system

0.001

Software Version

Programming example



MENU FUNCTION board USER1 24V DG INPUT TESTS (To access the Menu for input TESTS keep pressed OK for about 5 seconds)		
MENU'	Description	Description
StArT	Start test	The contact must be N.O. If activating the related command on the display the item SET lights up, the input will be working. If SET is always on, check the wirings.
StoP	Stop test	The contact must be N.C. If activating the related command on the display the item SET lights up, the input will be working. If SET is always on, make sure that the contact is a N.C. one
PEdo	Pedestrian start test	The contact must be N.O. If activating the related command on the display the item SET lights up, the input will be working. If SET is always on, check the wirings
EDGE	Safety edge test	The contact must be N.C. If activating the related command on the display the item SET lights up, the input will be working. If SET is always on, make sure that the contact is a N.C. one
PHa.1	Photocell 1 test	The contact must be N.C. If activating the related command on the display the item SET lights up, the input will be working. If SET is always on, make sure that the contact is a N.C. One
PHa.2	Photocell 2 test	The contact must be N.C. If activating the related command on the display the item SET lights up, the input will be working. If SET is always on, make sure that the contact is a N.C. one.
FEr.1	Opening limit switch test	The contact must be N.C. If activating the related command on the display the item SET lights up, the input will be working. If SET is always on, make sure that the contact is a N.C. one or that the related limit switch is not occupied.
FEc.1	Closing limit switch test	The contact must be N.C. If activating the related command on the display the item SET will light up, the input will be working. If SET is always on, make sur that the contact is a N.C. one or that the related limit swith is not occupied.
0.0	Batteries' voltage level	Batteries charge level indicator



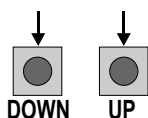
## **SELECTION OF THE SETTINGS**

**MENU functions table USER1 24V DG**

<b>MENU</b>	<b>Description</b>	<b>SET</b>	<b>Description</b>	<b>Default</b>	<b>Set value</b>
<b>Start</b>	Transmitter	<b>Start</b>	Start	<b>Start</b>	
		<b>StartPd</b>	Pedestrian Start	<b>StartPd</b>	
		<b>NESt</b>	Exp. output		
		<b>Stop</b>	Stop		
		<b>dEL.</b>	Delete TX		
		<b>dEL.S</b>	Delete single transmitter		
<b>Motor</b>	Motor type	<b>SL.d</b>	Sliding	<b>SL.d</b>	
		<b>SMRG</b>	Motors with magnetic limit switch		
		<b>VErg</b>	Verg		
		<b>UL3m</b>	Verg L 3m		
		<b>UL4m</b>	Verg L 4m		
		<b>UL5m</b>	Verg L 5m		
		<b>Erg</b>	Erg		
		<b>bArr</b>	Hydraulic barrier		
		<b>M800</b>	Mercury 800		
		<b>ErgM</b>	Erg Maxi		
<b>inv</b>	Motor and limit-switch inversion	<b>off</b>	Synchronized right motor	<b>off</b>	
		<b>on</b>	Synchronized left motor		
<b>Logic</b>	Working logics	<b>Auto</b>	Automatic	<b>Auto</b>	
		<b>PP.1</b>	Step by step type 1		
		<b>PP.2</b>	Step by step type 2		
		<b>2PuL</b>	Two buttons		
		<b>S.L.U</b>	Safety		
		<b>uOPr</b>	Dead man		
<b>TPAu</b>	Time of pause	<b>d.Sb</b>	Disabled	<b>d.Sb</b>	
		<b>t2.3</b>	Setting from 1s to 4min.		
<b>StPS</b>	Start in pause	<b>off</b>	In pause start is not accepted	<b>off</b>	
		<b>on</b>	In pause start is accepted		
<b>PrL</b>	Selflearning times	<b>off on</b>	Times learning start	<b>off</b>	
<b>StPr</b>	Test start	<b>off on</b>	Start command	<b>off</b>	
<b>End</b>	Exit menu	Select END and press OK to exit the menu. The menu deactivates automatically after 2 minutes			



## SELECTION OF THE SETTINGS



**PRESS AT THE SAME TIME FOR 5 SECONDS TO ENTER OR TO EXIT THE SPECIAL MENU**

**SPECIAL MENU FUNCTIONS TABLE USER 1 24V DG**

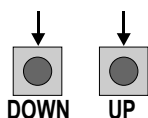
(To enter the Special Menu keep pressed UP and DOWN at the same time for 5 seconds.

To exit the Special Menu pressed END or keep pressed UP and DOWN at the same time for 5 seconds)

MENU SP	Description	SET	Description	Default	Set value
<i>SPEE</i>	Motors speed	0 100	Motors speed	80	
<i>SLdn</i>	Slowdown speed	0 100	Slowdown speed	40	
<i>SPLr</i>	Learning speed	0 100	Learning speed	80	
<i>EPoP</i>	Opening torque	0 100	Opening torque	70	
<i>EPCL</i>	Closing torque	0 100	Closing torque	70	
<i>dCLo</i>	Deceleration ramp in opening	0 100	Deceleration ramp in opening	30	
<i>dCLC</i>	Deceleration ramp in closing	0 100	Deceleration ramp in closing	30	
<i>PrbL</i>	Pre-flashing	d 15b	Pre-flashing disabled	d 15b	
		d 15b.05	Preflashing duration		
		CLon	Pre-flashing active only before closing		
<i>LGbu</i>	Flash output adjustment	LAMP	Flashing lamp	LAMP	
		SPY	Control lamp		
		ALYS	Always ON		
		bEEP	Buzzer		
<i>LCou</i>	Courtesy light	CYCL	Courtesy light disabled	CYCL	
		123	Courtesy light setting from 1s to 4min.		
<i>PEdo</i>	Pedestrian opening	20 100	Adjusts the space of pedestrian opening	30	
<i>PPEd</i>	Pedestrian Pause	5trt	Pause in pedestrian opening same as in total opening	5trt	
		d.5b	Pedestrian pause disabled		
		123	Setting from 1s to 4 min.		
<i>55tr</i>	Acceleration ramp	0 100	Acceleration ramp	70	
<i>CYCL</i>	Number of cycles for maintenance	100 10E4	Setting from 100 to 100000	10E4	
<i>nCYC</i>	Number of executed cycles	0 10E9	To reset keep pressed OK for 5 s.	0	
<i>t.tr</i>	Timer management	d.5b	Disabled	d.5b	
		PH2	Timer function active on photocell 2		
		PEd	Timer function active on pedestrian input		
<i>5EdG</i>	Safety edge	d.5b	Edge is active but not protected	d.5b	
		82	Edge is active and protected by a 8k2 resistor		
<i>PH 1C</i>	Photocell 1 management	CLo5	Photocell active in closing	CLo5	
		oPEr	Photocell active in opening and closing		
		5LoP	Photocell active before opening and in closing		
		PRrC	The photocell stops in closing and closes when released		
		CL. 1n	The photocell gives a command to close during opening, pause and closing		
		rPPR	The photocell charging the pausing time		



# SELECTION OF THE SETTINGS



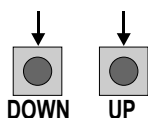
**PRESS AT THE SAME TIME FOR 5 SECONDS TO ENTER OR TO EXIT THE SPECIAL MENU**

**SPECIAL MENU FUNCTIONS TABLE USER 1 24V DG**

(To enter the Special Menu keep pressed UP and DOWN at the same time for 5 seconds.

To exit the Special Menu pressed END or keep pressed UP and DOWN at the same time for 5 seconds)

MENU SP	Description	SET	Description	Default	Set value
PH2C	Photocell 2 management	CLoS	Photocell active in closing	oPEn	
		oPEn	Photocell active in opening and closing		
		StoP	Photocell active even before opening		
		PARC	Photocell stops in closing and closes when released		
		CL IN	The photocell gives a command to close during opening, pause and closing		
		rPPA	Photocell charging the pausing time		
24VA	24Vaux output management	RLYS	24Vaux output always power supplied	RLYS	
		oP.LL	24Vaux output power supplied only during opening and closing		
		oPEn	24Vaux output power supplied only during opening		
		CLoS	24Vaux output power supplied only during closing		
		PAUS	24Vaux output power supplied only during pause		
		PHLE	24Vaux output for connection of photocell TX to autotest		
		PHEC	Phototest economy Output for Self-test ON only during the operation of the motors.		
rEP5	Position recovery	0 100	Regulates the recovery of the motor inertia	5	
rLot	Limit switch inversion	d.5b	Disabled	d.5b	
		0 100	Adjusts the space of return after reading of the limit switch		
RLLS	Anti-Intrusion alarm	d.5b	Disabled	d.5b	
		o.LLo	Only on limit switch in closing		
		oP.LL	On limit switches in closing and in opening		
		o.oPE	Only on limit switch in opening		
LL IN	Courtesy light with timer management	oFF	Allows to keep the light switched off when the timer is active	oFF	
		oN	Allows to keep the courtesy light switched on when the timer is active		
d. RG	Events diagnostic	0 10	Shows last event (See alarms table)		
PhLE	Auto-test photocells	Ph. i2	Auto-test active on Photo1 and Photo2	Ph. i2	
		Ph. 1	Auto-test active only on Photo1		
		Ph. 2	Auto-test active only on Photo2		
t.oPn	Amperometric tolerance management in opening	0 100	Adjust the amperometric tolerance in relation to the detected stop in opening	0	
t.cLo	Amperometric tolerance management in closing	0 100	Adjusts the amperometric tolerance in relation to the detected stop in closing	0	



## **SELECTION OF THE SETTINGS**

**PRESS AT THE SAME TIME FOR 5 SECONDS TO ENTER OR TO EXIT THE SPECIAL MENU**

<b>SPECIAL MENU FUNCTIONS TABLE USER 1 24V DG</b> (To enter the Special Menu keep pressed UP and DOWN at the same time for 5 seconds. To exit the Special Menu pressed END or keep pressed UP and DOWN at the same time for 5 seconds)					
<b>MENU SP</b>	<b>Description</b>	<b>SET</b>	<b>Description</b>	<b>Default</b>	<b>Set value</b>
<i>PhoF</i>	Photocell management exclusion	<i>0 50</i>	Excludes the operation of the photocell during closing for the set percentage	<i>0</i>	
<i>MASL</i>	Master-slave management	<i>d 15b</i>	Disabled	<i>d 15b</i>	
		<i>MASL</i>	For applications with two motors in master-slave, it allows to set the control unit as master		
		<i>SLAU</i>	For applications with two motors in master-slave, you can set the control unit as slave		
<i>P5rd</i>	Enter password	<i>----</i>	Allows the entering of a password which blocs the modification of the control unit parameters (see page 16)	<i>----</i>	
<i>End</i>	Exit special menu	Select END and press OK to exit the special menu. The special menu deactivates automatically after 20 minutes.			



# **RADIO TRANSMITTER SELF LEARNING** **WITH RECEIVER ON BOARD OF CONTROL UNIT**

**⚠ WARNING:** Make the radio transmitters programming before you connect the antenna and insert the receiver into the special CMR connector (if available) with turned off control unit. (The control unit automatically recognizes if the receiver is a RF, RF Roll or RF Roll Plus module).

**With RF Roll or RF Roll Plus module it will be possible to use only Coccinella Roll or Coccinella Roll Plus radio transmitters.**

**With RF UNI module it will be possible to use both Coccinella Roll Plus transmitters and radio transmitters with fixed code. The first memorized radio transmitter will determine the type of the remaining radio transmitters.**

Select through the display **Er5n** and press OK, now select with the UP and DOWN buttons, the command to which you want to associate the button (it is possible to associate max. 2 commands) and press OK to confirm the choice, now press the button of the radio transmitter which you want to associate. If the storage is successful, the display will show **nEn**.

If the receiver is a Rolling Code, press twice the button of the radio transmitter that you want to program to memorize the first TX.

In the **Er5n** MENU it is possible to select **5trt** (to associate a Start command), **5tPd** (Pedestrian Start), **nE5t** (To activate the LIGHT contact), **5toP** (To associate the STOP command to the TX), **dEL** (To delete all TX).

## **Notes:**

- Enter radio transmitters learning only when the working cycle stops and the gate is closed.
- If the radio transmitters are Rolling Code it's possible to memorize up to 800 codes (buttons).
- If the radio transmitters are with fixed code it will be possible to memorize up to max. 30 codes (buttons).
- You can store max. 2 of the available 4 functions. If the control unit receives a code which was already associated to another function it will be updated with the new function.

## **DELETE TRANSMITTERS FROM THE RECEIVER**

With modules different from RF UNI, it will be possible to delete only the entire memory of the receiver.

Proceed as follows: select from the menu **Er5n dEL** and hold the OK button until the display shows the message **donE**.

With the RF UNI module, it will be possible to also delete the single button of the transmitter.

It can be done in two ways:

1) If you have the transmitter, or if you are using transmitters with fixed code, the cancellation can be executed by simply retransmitting the code. Ex. Button 1 of the transmitter memorized as START; access the menu **Er5n** press OK, select **5trt**, press OK.

Send a **5trt** command from the transmitter and on the display will show **dEL**.

At this point the single button results deleted.

2) If you do not have a transmitter, or you are using a Roll Plus transmitter, you can delete the transmitter selecting the serial number of the transmitter to be deleted.

Proceed as follows: Access the menu **Er5n**, press OK, select **dEL5**, press OK, choose the memory location to be deleted through the UP and DOWN buttons, press OK, check on the display if the serial number of the transmitter to be deleted is the right one, press OK, on the display shows **5UrE**, if the transmitter to be deleted is the right one press OK, otherwise press the DOWN button to return to the menu **Er5n**.

**Note:** When using Roll Plus transmitters, it is recommended to record on a table similar to the below example, the serial number associated to it to the memory location where it was stored.

**TABLE  
EXAMPLE**

Memory location	Transmitter button	1	2	3	4	Serial number	Customer
0							
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							





## **FUNCTION LOGIC**

### **AUTOMATIC LOGIC**

A start impulse opens the gate. A second impulse during the opening will not be accepted.

A start impulse during closing reverses the movement.

**NOTE 1: To have the automatic closing it is necessary to set a pause time, otherwise all the logic will be semi-automatic.**

**NOTE2: It is possible to choose, whether to accept or not, the start in pause, selecting in the MENU the item ST.PS and choosing ON or OFF. By default, the parameter is OFF.**

### **SECURITY LOGIC**

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

A start impulse during closing reverses the movement.

**NOTE 1: To have the automatic closing it is necessary to set a pause time, otherwise all the logic will be semi-automatic.**

**NOTE2: It is possible to choose, whether to accept or not, the start in pause, selecting in the MENU the item ST.PS and choosing ON or OFF. By default, the parameter is OFF.**

### **STEP BY STEP TYPE 1 LOGIC**

The start impulse follows the OPEN-STOP-CLOSE-STOP-OPEN logic.

**NOTE 1: To have the automatic closing it is necessary to set a pause time, otherwise all the logic will be semi-automatic.**

**NOTE2: It is possible to choose, whether to accept or not, the start in pause, selecting in the MENU the item ST.PS and choosing ON or OFF. By default, the parameter is OFF.**

### **STEP BY STEP TYPE 2 LOGIC**

The start impulse follows the OPEN-STOP-CLOSE -OPEN logic.

**NOTE 1: To have the automatic closing it is necessary to set a pause time, otherwise all the logic will be semi-automatic.**

**NOTE2: It is possible to choose, whether to accept or not, the start in pause, selecting in the MENU the item ST.PS and choosing ON or OFF. By default, the parameter is OFF.**

### **DEAD MAN LOGIC**

The gate opens as long as the **START** button of opening is pressed; releasing it the gate stops. The gate closes as long as the button connected to the **PEDESTRIAN START** is pressed; releasing it the gate stops. To execute complete opening and/or closing cycles the related pushbuttons must be constantly pressed.

### **2 PUSHBUTTONS LOGIC**

One start opens, one pedestrian start closes. In opening the closing will not be accepted. In closing a start command reopens, a pedestrian start command (closes) will be ignored.

## **PASSWORD ENTERING MANAGEMENT**

With a new control unit all menus can be displayed and set and the password will be disabled.

Selecting one of the Menus and keeping UP and DOWN pressed at the same time for 5 seconds, you will access the SP Menu containing the *P5.r.d.* Submenu.

Pressing OK in the *P5.r.d.* Menu, you will proceed with the entering of the numeric code of the 4-digit PASSWORD.

Use UP and DOWN to increase or decrease the number, press OK to confirm it and you will pass automatically to the entering of the next number. Pressing OK after the last entered number the word *5URE* appears, confirm the activation of the PASSWORD and the message *done* appears, pressing UP or DOWN instead you can cancel the operation and *NULL* will appear on the display.

Once entered the PASSWORD, it will be definitively activated, once the display switch off timeout has expired, or by turning off and on again the control unit. Once the PASSWORD has been activated, the menus of the display can be only displayed but not set. To unlock them you must enter the correct PASSWORD in the *P5.r.d.* menu, if the password is wrong the message *Err* will appear.

At this point, if the password has been entered correctly, the menus will be unlocked and it will be possible to change the parameters of the control unit again.

If the control unit has been unlocked through *P5.r.d.* Menu, it is possible to enter a new and different password, using the same entering process as for the first one; at this point, the old password will no longer be valid.

If the password has been forgotten, the only way to unlock the control unit is to contact the SEA technical assistance, which will assess whether to provide the procedure to unlock the control unit or not.

**Note:** The password cannot be set through the Jolly terminal.

# PROGRAMMER JOLLY PARAMETERS ADJUSTMENT

The JOLLY programmer allows to keep under control and to change all parameters of the control unit without need to use the buttons of the control unit. Compared to the on-board display, the programmer allows to view the programming instructions in the user's language and in a non-encrypted way. In addition to the JOLLY programmer, the user can work comfortably standing up without looking at the control unit.

Screen 1	
Language: IT	Available languages: IT,EN,FR,ES [ Italian, English, Spanish, French]



The arrow indicates that the parameter can be changed with the + and - buttons.

Screen 2	
Motor	[Barrier / Sliding doors magnet / Erg / Verg L. 3m / Verg L. 4m / Verg L. 5m]
Master-Slave	Master-Slave mode (OFF / Slave / Master)
Speed	[30÷100 ] motor 1 speed adjustment
Slow Speed	[30÷100 ] slowdown speed adjustment



Screen 3	
Learn speed	[30÷100 ] selflearning speed adjustment
Sp.Decel.O1	[Off÷100 ] motor 1 slowdown space in opening adjustment
Sp.Decel.C1	[Off÷100 ] motor 1 slowdown space in closing adjustment
SoftStart	[0÷100 ] motor 2 slowdown space in closing adjustment



Screen 4	
Torque op.M1	[10÷100]% (max. motors current)
Torque cl.M1	[10÷100]% (max. motors current)
Cycle	[Secur./auto/deadman/step1/step2/two buttons]
Pause time	[0÷240]s (pausing time in seconds, 0s halfautomatic logic)



Screen 5	
Learning	Times learning [On-Off]
Cycles	[0÷... ] (Number of executed cycles )
Pedestrian	[30÷100]% (Pedestrian opening rate)
Anti Intrusion	[Off,Open,Close.,op.cl.] (Implies the presence of a N.C. contact on limit switch which if released forces the motors in closing)



Screen 6	
Preblink	[Close, Off, 0÷5s] (Only before closing, OFF from 0 to 5s)
Light Time	[Cycle, Off, 0÷240s] (Only during cycle, OFF from 0 to 240s)
Ph.test	[1,2-1-2] (Only on Foto1, only on Foto2, on both)
Max Cycles	[100÷100000] (Number of cycles for maintenance)





## **PROGRAMMER JOLLY PARAMETERS ADJUSTMENT**

**NOTE:** For the respect of the valid European rules on the safety of the electric gates, it is recommended to not adjust the parameters **torque** on the value 100%.

<b>Screen 7</b>		
Flash	[Normal/Control/always/beep]	←
Photo1	[Close/Open/stop/park/close imm./rel.pause]	←
Photo2	[Close./Open/stop/park/close imm./rel.pause]	←
8k2 edge	[On-Off] (On ON it allows to connect a balanced edge with 8k2 resistance)	←

<b>Screen 8</b>		
Timer	[OFF-Ped-Foto2] (Allows the timer activation on the Foto2 or pedestrian input)	←
Pos. Recovery	[0÷100]% (Percentage of position recovery)	←
24V aux	[Cycle/in open /in clos./pause/ph.test/ph.T.ECO/always]	←
Start pause	[ON/OFF] (On ON and if the autom. clos. is on ON a start will cause the immediate closure of the gate)	←

<b>Screen 9</b>		
Mot.inv.	[ON/OFF] (Allows to changes at the same time the limit switch and the direction of motor rotation without disconnecting the cables)	←
Start	[ON/OFF] (Equivalent to giving a test start)	←
Rev. Mot.	[0÷100%] (Activates an inversion at the end of closing)	←
Ph.off: 0%	[0÷100%] (Excludes the photocell reading in closing for the set percentage)	←

<b>Screen 10</b>		
P.Ped	[start, Off, 0÷240 sec] (Differenciates the pedestrian pause from the total one)	
Tl.op.1	[0÷ 100%] (Tolerance between stop and obstacle)	←
Tl.cl.1	[0÷ 100%] (Tolerance between stop and obstacle)	←
L.Timer	[Off-On] Allows to keep switched on or off the control light if a Timer is active	←

<b>Screen 11</b>		
Event	Summarizes the last 10 events that occurred on the unit	←



# START - STOP - PEDESTRIAN START - ANTENNA - PHOTOCELL

## Photocell 1 and Photocell 2 Connections

**Note:** If the photocells are not connected, put a jumper between the clamps (6,7,8).

+ = 24V(FL) --- COM = 0V PH1 = Photocell contact 1 PH2 = Photocell contact 2

**Note:** For the autotest connect the TX to the 24Vaux clamp and activate the Autotest function. The standard setting of the photocell 1 is FOTO CLOSE and the one of the photocell 2 is FOTO OPEN. The photocell 2 can be set also as TIMER (see TIMER function).

**Note3:** On the Ph&E menu you can also activate the self-test even on the single photocell.

## OPTIONS ON FOTO1 and FOTO2 adjustable on on-board display or with JOLLY terminal.

**FOTO CLOSE activation (CL&S):** If occupied, reverses the movement in closing, during pause it prevent the closing.

**Activation repeat pause (rPPA):** If occupied, during pause it recharges the timer of pause. In closing it reverses the movement.

**FOTO OPEN activation (oPEN):** If activated the photocell blocks the movement as long as it's busy, when released the opening continues.

**FOTO PARK activation (PR&L):** in opening it is not active; in pause are activated it commands the closing when released, otherwise it's not active; in closing it stops the movement as long as it is busy, when released the closing continues.

**FOTO STOP activation (St&P):** When activated before the opening the photocell blocks the automation as long as it is busy, during the opening it will be ignored. In closing the intervention of the photocell causes the reopening.

**Activation PHOTO CLOSE IMMEDIATELY:** The photocell stops the gate as long as it is occupied in both opening and closing, when released it gives a closing command (Closing one second after release of the photocell).

## Options 24Vaux --- can be set with on-board Display or with Jolly device.

Through the Jolly programmer it is possible to chose when having tension on the 24Vaux output. The options are: always, only during opening, only during cycle, only before opening or only during pause, Ph&E and Ph&L.

When using control units with batteries and / or solar panels, we recommend connecting the accessories which are not used when operator stands still (e.g. photocells) to a 24Vaux output, setting the option "oP&L". With this setting you can save energy by lowering power consumption in stand-by, increasing the autonomy of the system.

## PEDESTRIAN START (N.O.) The pedestrian start can be connected between the clamps 2 and 4 of the CN1 terminal.

This input allows a partial opening the opening space can be set through the on-board display or through the JOLLY device.

**Note1:** The contact for partial opening is a N.O. Contact (Normally open).

**Note2:** In 2 BUTTONS logic it is necessary to keep pressed the Start Ped. to re-close the automation.

**Note3:** In dead man logic this button executes the re-closing if you keep it pressed.

**Note4:** When closed during pause, the gate will reclose only after this input has been reopened.

**TIMER activation:** This input can be transformed into TIMER (See TIMER).

## STOP (N.C.) The STOP is connected between the clamps 2 and 5 of the CN1 terminal.

The pressure on this button immediately stops the motor in any condition/position. A start command is needed to re-start the movement. After a stop the motor always re-starts in closing.

## START (N.O.) The START is connected between the clamps 2 and 3 of the CN 1 terminal.

An impulse given to this contact opens and closes the automation depending on the selected logic 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).

**Note1:** In DEAD MAN logic it is necessary to keep pressed the Start for the opening of the automation.

**Note2:** In 2 BUTTONS logic this button performs the opening.

## TIMER

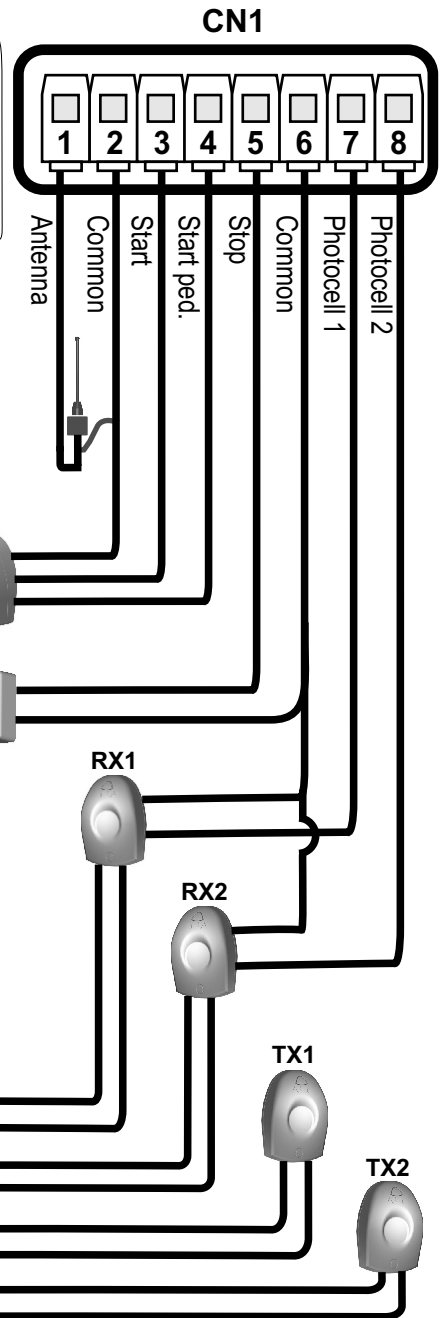


Can be activated through on-board display or through the Jolly programmer. In both cases it's a N.O. contact which provokes the opening of the automation keeping it open until it is activated. When it's released, the gate attends the set pausing time and executes the reclosing. The TIMER command can be activated on the inputs FOTO2, START PEDESTRIAN.

**Note1:** When activated on the pedestrian entry, the pedestrian will be disabled also on the radio transmitter.

**Note2:** In case of intervention of a security device during the timer (Stop, Ammeter, Edge), to restore the movement it will be necessary to give a start impulse.

**Note3:** In case of no power supply with open gate and active Timer the control unit will restore its use, otherwise if during restore of the power supply the TIMER is not activated it will be necessary to give a start impulse for the reclosing.





# **LIMIT SWITCH AND SENSOR BARRIERS**

## **Sensor barriers**

This control unit comes with a detection device of motor current absorption which allows to reveal possible obstacles during the opening and the closing of the gate. When this device intervenes in opening it causes the inversion of the movement for around a second, if it intervenes in closing it causes the total reopening.

**Note1: The ammeter sensitivity is adjustable both in opening and in closing through the on-board display or through the JOLLY terminal. With high torque the gate reverses after 5 seconds.**

**Attention: In case of obstacle, if the automatic reclosing is on, the gate will attempt to close for 3 times, whereupon a start signal will be necessary to re-establish the movement.**

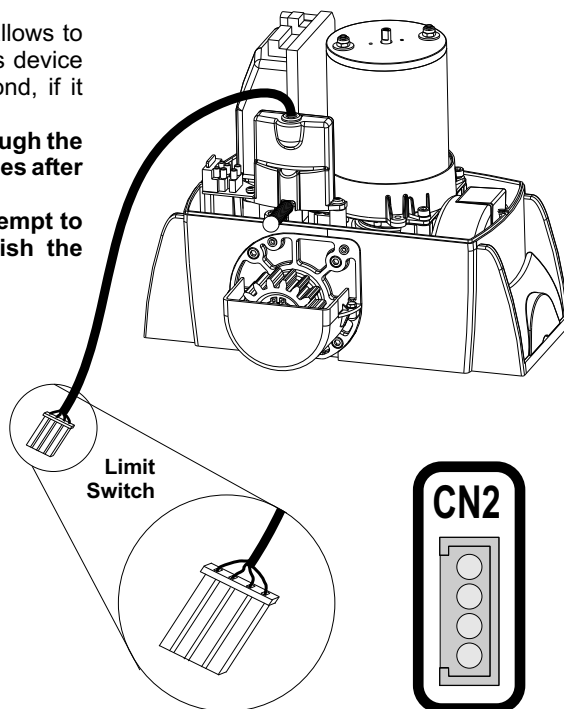
## **Limit switch**

The limit switch can be connected through the special LIMIT SWITCH connector on the control unit. The control unit can administrate mechanical, inductive and magnetic limit switches. Only on some special applications it will not be necessary to connect the limit switches. The control unit will automatically realize if limit switches are present or not.

1) Through the on-board display or through the JOLLY programmer it is possible to activate the anti-intrusion function. This function is tied to the presence of at least one limit switch which, when free, forces the motor to re-close.

**Note: if during programming phase the motor and limit switch times should not be in phase between them, the gate will start in closing, it stops and will not complete the selflearning of the times, at this point it will be necessary to switch off the tension and to invert the cables of the motor. The first movement in selflearning must always be executed in closing.**

**ATTENTION: When using SEA magnetic limit switches, make sure that the motor is set on *SMAG*.**



# **ALARMS INDICATIONS**

Signals	Kind of alarm	Solutions
<i>FALU</i>	Motors current fault	Sure there are no short circuits on the motor or on the control unit.
<i>FL24</i>	24V Power supply fault	Make sure there are no short circuits on the wiring or on the control unit and no overloads.
<i>FLAU</i>	24Vaux output voltage	Make sure there are no short circuits on wiring or control unit and no overload.
<i>FLLI</i>	Power supply fault	Check the network or the F1 fuse.
<i>FLBE</i>	Battery voltage fault	If network is not present
<i>FEdG</i>	Balanced edge input fault	Check for a 8.2 Ohms resistive value on the edge input, if not available enter it, or disable the reading of the 8k2 in the special menu.
<i>FPho</i>	Self-test photocells fault	Check the photocells operation and / or connections on the control unit.
<i>FLFC</i>	Limit switch activation fault	Check the operation of both limit switches and / or correspondence between movement direction of the motor and engaged limit switches.
<i>FLSL</i>	Slave fault	Check the connection between MASTER and SLAVE or if the SLAVE board is actually set as such.
<i>FLFL</i>	Flashing lamp fault	Check connections and / or conditions of the lamp.
<i>LYCL</i>	Max. cycles	Maintain and / or reset the number of performed cycles.

**Note:** To exit from the error messages, press OK. If the error persists, make all required checks for the specific error and / or disconnect the device that generates the error to see if the error disappears.

At each opening and closing of the automation the flashing light will blink. It blinks once per second during opening and twice per second during closing, while it remains lit during pause.

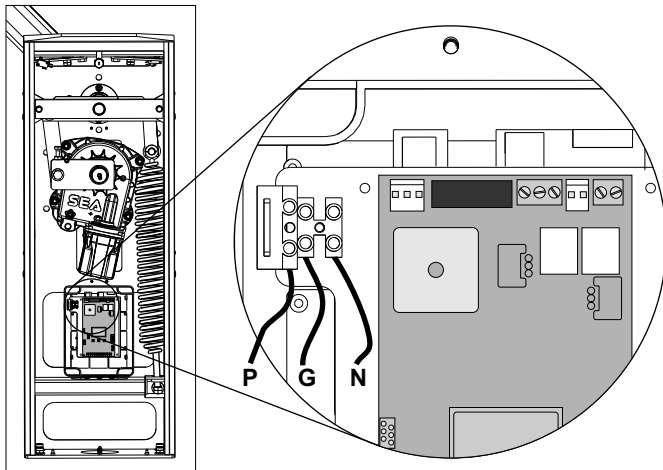
It is possible to view the alarms also on the flashing light or on the control lamp, simply by observing the number of flashes emitted and verifying the reference in the table below:

Flashings Number	Kind of alarm
9	Motors fault
2	Photocell in closing
3	Photocell in opening
6	Opening impact
4	Safety edge

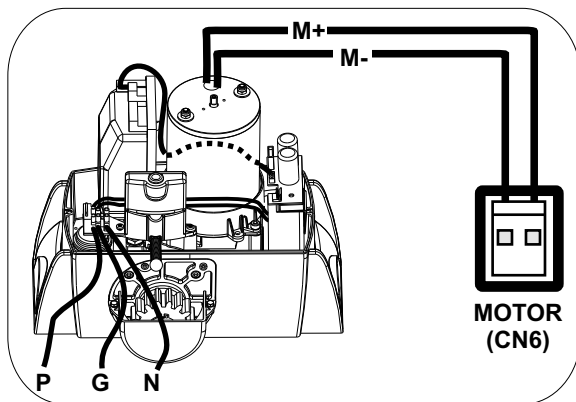
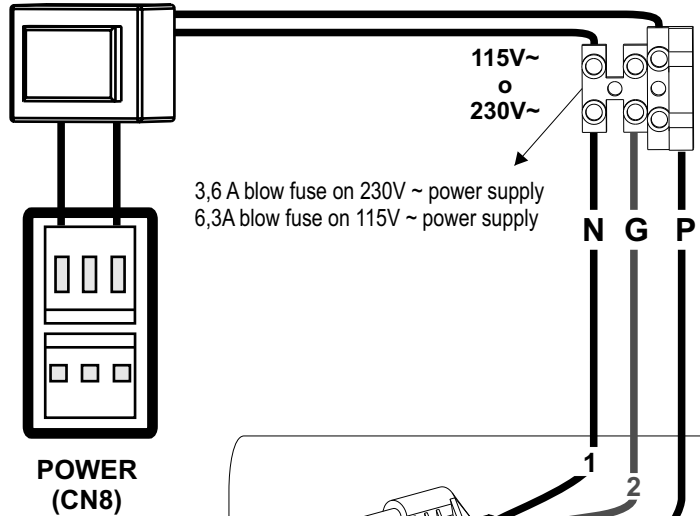
Flashings Number	Kind of alarm
5	Stop
7	Max. Reached cycles
6	Closing impact
4 fast	Limit switch error



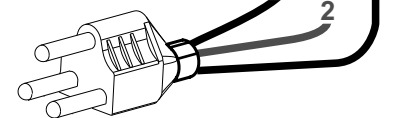
## MOTOR POWER SUPPLY



### TRANSFORMER



**WARNING:**  
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 foresee and use two separate sheaths.



### Power input

Input for the connection of the electric power.

P = SINGLE PHASE 120V~

N = NEUTRAL

G = GROUND

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

## SECURITY EDGE AND WARNING LAMP OR BUZZER

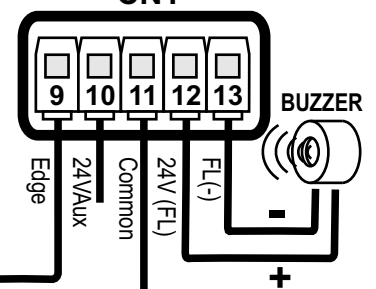
### SECURITY EDGE

Between clamps 9 and 11 of CN 1 it is possible to connect an active safety edge on the terminal M8. If this device is pressed it opens the contact causing a partial inversion of the movement both in opening and in closing. If not used you must put a jumper between the contacts GND and 9 of CN1.

Note1: contact N.C.

Note2: Through the on-board display or the Jolly programmer it is possible to activate the balanced edge 8K2, in this case the edge contact is controlled by a special resistance value revealing the eventual involuntary short-circuit of the device. In case of imbalance of the device a special alarm will show on the on-board display or on the JOLLY programmer.

### CN1



Security edge

### Flashing Lamp 24V $\approx$ 15W (Warning lamp) or Buzzer

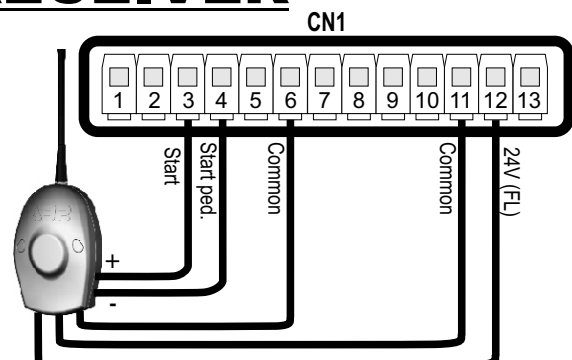
The flashing lamp or buzzer can be connected between the clamps 24V (FL) and FL (-) of CN 1.

The warning lamp or buzzer advises that the automatic gate is moving with 1 flash/second in opening and 2 flashes / second in closing. During pause it remains switched on. Through the warning lamp or buzzer it is also possible to identify alarms tied to the STOP, PHOTOCELL 1, PHOTOCELL 2 and EDGE devices. Through the display or the JOLLY programmer it is possible to activate the pre-flashing function and/or to modify the function of the warning lamp/buzzer choosing between fix flashing, control lamp or Buzzer.

## EXTERNAL RECEIVER

### Example: Connection of a radio receiver

For the connection of the receiver refer to the relative instructions manual.







## MASTER-SLAVE FUNCTION

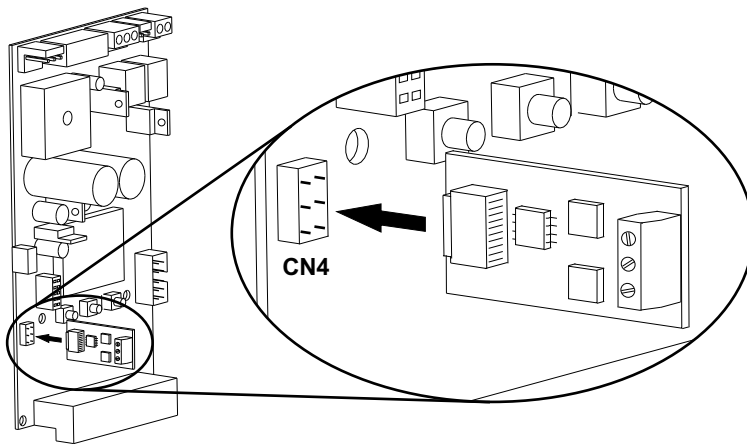
To set an installation with two motors in **MASTER-SLAVE** function it is recommended to do as follows:

- 1) Set the two motors as if they were two independent installations, make sure that the individual motor works properly and that the limit switches (when present) are read properly.
- 2) Once sure of the correct functioning connect the control unit MASTER to the control unit SLAVE through the special clamp (Code SEA23001220).
- 3) Now set the control unit, which has to manage the commands and motor 1 (photocell, keyswitch, STOP, safety edge etc.) as MASTER and the other one which will move motor 2 as SLAVE.
- 4) Follow up the selflearning of the times of the MASTER control unit.

**Note 1:** The master and slave settings on the control unit are present in the special menu selecting *MASTER*.

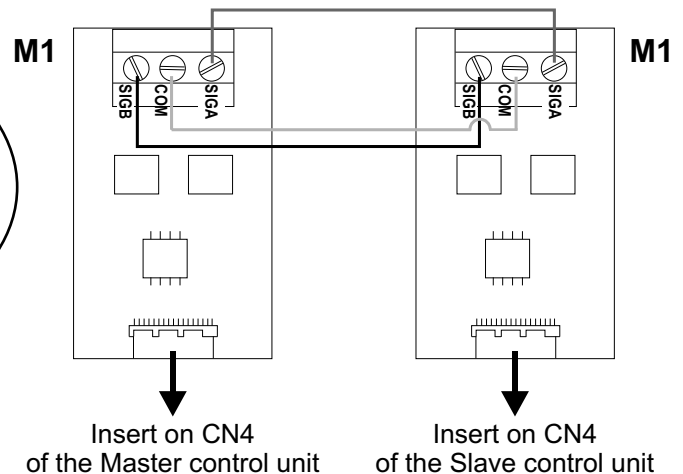
**Note 2:** All these operations can also be managed through the JOLLY programmer).

**Note 3:** On the SLAVE it is possible to set the following functions only: torque, speed, motor type, slowdown speed, acceleration, deceleration, position recovery, 24V aux and motor inversion. All other parameters will be set only by the MASTER control unit.

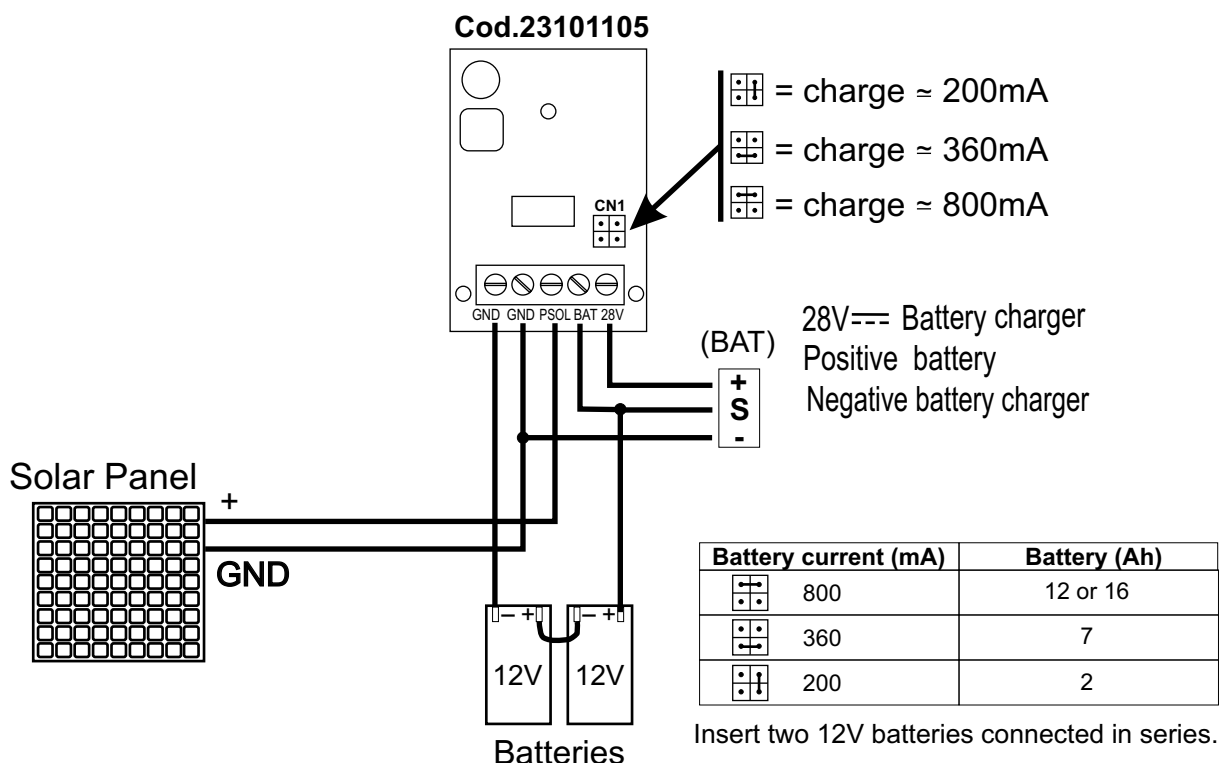


It is recommended to use a two twisted pairs shielded cable with less than 0.5 mm<sup>2</sup> section.

**Note:** respect the polarity of the cables.



## CONNECTION OF BATTERIES TO BATTERY CHARGER CARD







## **TROUBLE SHOOTING**

<b>Advices</b>		
<b>Make sure all Safeties are turned ON</b> <b>All N.C. contacts must have jumpers</b>		
<b>Problem Found</b>	<b>Possible Cause</b>	<b>Solutions</b>
Motor doesn't respond to any START impulse	a.) Jumper missing on one of the N.C. Contacts b.) Burnt fuse	a.) Check the connections or the jumpers on the connections of the safety edge, of the stop and of the photocell b.) Replace the burned fuse on the control unit
Gate doesn't move while the motor is running	a.) The motor is in the released position b.) There is an obstacle	a.) Re-lock the motor b.) Remove obstacle
Gate doesn't reach the complete Open / Closed position	a.) Wrong setting of the limit switches b.) Error on programming c.) Gate is stopped by an obstacle d.) Torque or speed too low	a.) Set limit switches b.) Repeat programming c.) Remove obstacle d.) Increase torque parameter
The gate opens but doesn't close	a.) The contacts of the photocells are open. b.) The stop contact is open c.) The edge contact is open d.) Ammeter alarm	a.) b.) c.) Check the jumpers or the signals indicated on the warning lamp d.) Check if the ammeter alarm has intervened and eventually increase the torque parameter.
The gate doesn't close automatically	a.) Pause time set to high b.) Control unit in semi-autom. logic	a.) Adjust pause time b.) Set the pause parameter on a different value from the $d + 5b$

## **SALES CONDITIONS**

**GENERAL WARNING:** Installation must be realized using parts and accessories approved by SEA. SEA is not responsible for incorrect installations and/or non-compliance with safety standards according to the law in-force. SEA is in no way liable for any damages and/or malfunctioning due to using parts and accessories non-compliant with the UL325 safety standards.

**ORDERS:** Orders are processed upon approval by SEA. Buyers must confirm orders by sending a written Purchase Orders to SEA. Purchase Orders are intended as confirmation of orders and binding for the buyer, which accepts SEA sales condition.

**QUOTATION:** Quotation and special offers with a non-specified duration expires automatically after 30 days.

**PRICES:** Prices are based on the Price List in force. Discounts and quotation from Sales Rep. and other selling branches must be approved by SEA. Prices are F.O.B SEA Warehouse in Miami and do not include shipments costs. SEA reserves the right to modify the price list at any time and provide notice to its sales network.

**PAYMENT:** Method of payments and terms are notified by SEA and displayed on the commercial invoice.

**DELIVERY:** The delivery time on the invoice is not binding and represents an estimated delivery. Shipments costs will be charged to the buyer and SEA is not responsible for delays and/or damages occurred to the products during shipment.

**COMPLAINS:** Complains and/or claims must be notified to SEA within 7 business days after receiving the products. Claims and complains must be supported by original documents. Customer must contact the factory for instructions and authorization. Merchandise returned for credit must be current, uninstalled and unused and returned in its original packaging. Freight must be pre-paid on all authorized returns.

**REPAIRS:** Repairs and parts are subject to the availability in stock. Shipment of products for repairs must be pre-paid by the customer. Products shipped without authorization, sender's details and description of the problems will be refused. Customers must contact SEA for instructions.

**WARRANTY:** for the original buyer only:

Hydraulic and oil-bath motors: 36 months warranty from the date of invoice on manufacturing, assembling and workmanship defects.  
Electro-mechanic motors and electronic control systems: 24 months warranty from the date of invoice on manufacturing, assembling and workmanship defects.  
Lepus and Full Tank Standard model: 60 months warranty from the date of invoice on manufacturing, assembling and workmanship defects.  
No warranty will be recognized for damages due to incorrect installation and/or improper use for which the product was intended. SEA warranty obligations shall be limited to repair or replace the defective product/parts at SEA option, upon examination of the products by SEA technical Staff. All replaced parts must remain property of SEA. The warranty status of the product remains an unquestionable assessment of SEA. Buyer must ship pre-paid defective products. Products under warranty will be returned pre-paid by SEA. Recognized defects, whatever their nature, will not produce any responsibility and/or damage claims to SEA USA Inc and SEA s.r.l. Warranty shall not cover any required labor activities. Warranty will in no case be recognized if alterations and any other changes will be found on products. Warranty will not cover damages caused by carriers, expendable materials and faults due to improper use with the products specifications. No indemnities are recognized during repairing and/or replacing of the products under warranty. SEA USA Inc. and SEA s.r.l. decline any responsibility for damages to person and objects deriving from non-compliance with safety standards, installation instructions or use of the products sold. It is intended that warranty will be recognized only on products bought through the SEA authorized network. Products must be installed by professionals. No warranty will be recognized if products are installed directly by the final user. Warranty does not apply in case of unexpected events such as fire, flood, electrical power surge, lightning, vandalism and others.

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