



**SEA®**  
Sistemi Elettronici  
di Apertura Porte e Cancelli  
International registered trademark n. 80488

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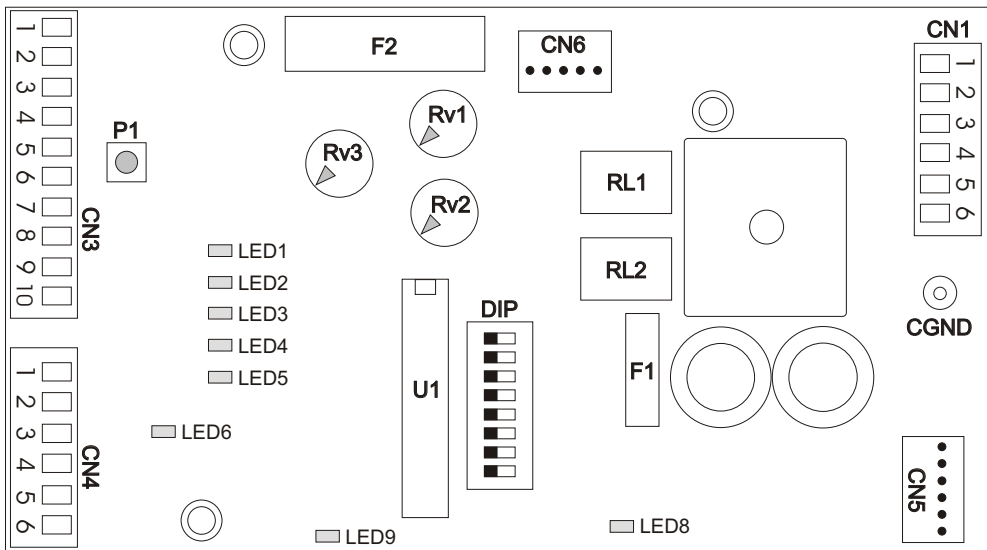
English

# CONTROL UNIT

## GATE 1 24V DC

### AMMETER

### (23001157)



LED1 = Photocell	CN5 = Battery charger connector ( <i>see last page</i> )
LED2 = Stop	CN6 = Radio receiver connector
LED3 = Start	Rv1 = Motor speed regulation
LED4 = Limit switch in opening	Rv2 = Slow down speed regulation
LED5 = Limit switch in closing	Rv3 = Anti-crushing sensitivity regulation
LED6 = Pedestrian or Timer	P1 = Working time memorizing push button/start
LED8 = Power supply	DIP = Dip switch for functions setting
LED9 = Programming	F1 = Power supply and motor fuse (15A) Saturn-10A Taurus
CN1 = Transformer motor connector	F2 = Accessories fuse (2A)
CN3 = Inputs/outputs 24V $\approx$ connector	RL1 - RL2 = Relay motor direction
CN4 = Flashing lamps 24V $\approx$ connector	U1 = Microcontroller
CGND = Earth connector	



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## ARRANGEMENTS

Read attentively the installation manual as it gives important indications concerning safety, installation, use and maintenance.

Installation, maintenance, reparation, controls and eventual putting out of function of the product must be executed by qualified staff only.

**For the security of people 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 damages to people. The max. length of the power supply cable between control unit and motors is 10m, use cables with 2,5 mm<sup>2</sup> section.**

Use wirings with double insulated cables (cables with sheath) up to the immediate proximities of the terminals especially for the power supply cable (230V~).

The control unit must not be used by people (including children) whose physical, sensory or mental ability is reduced, or with lack of experience or knowledge, unless they are guarded or have been instructed on how to use the control unit by a person responsible for their safety. Children must be guarded to make sure that they don't play with the control unit.

Foresee on the power supply net of the automation a device that assures the complete omnipolar disconnection from the net, with a distance of opening of the contacts on each pole of at least 3mm. Those devices of disconnection have to be foreseen on the power supply net accordingly to the rules of installation, and they have to be directly connected to the power supply terminals.

It is necessary to keep in adequate distance (at least 2.5 mm in the air) the low tension conductors (230V~) from the very low tension conductors (SELV) or to use a suitable sheath of at least 1 mm which supplies an additional insulation.

Make sure that during installation the power supply and interconnection cables cannot come into contact with pointed or sharp extremities.

Dispose of the package materials (plastics, carton, polistirene, etc.) respecting the laws in order. Keep nylon and polistirene bags out of the reach of children.

Save these instructions for further information attaching them to the technical documents.

This product has been projected and built exclusively for the use described in this instruction manual. Uses not indicated in this manual could damage the product and be source of danger.

SEA declines all responsibility for improper or different use from the one for which it has been planned and described in the present manual.

Don't install the product in explosive atmospheres.

SEA declines all responsibility for the non-observance of the good technique in the construction of closings (doors, gates, etc.), as well as for the deformations which could occur during the use.

Remove the power supply before any intervention on the installation. Disconnect also possible battery buffers if present.



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||| English |||

Make sure that the earth installation has been correctly made: connect all the metallic parts of the closing (doors, gates, etc.) and all the components of the installation provided with earth terminals.

Apply all the safety devices (photocells, sensitive edges, etc.) which are necessary to protect the area from dangers of crushing, conveying, cutting.

SEA declines all responsibility for safety and for the correct functioning of the automation if parts of other producers are used.

Use only original parts for any maintenance or reparation.

Do not modify the parts of the automation if not explicitly authorized by SEA.

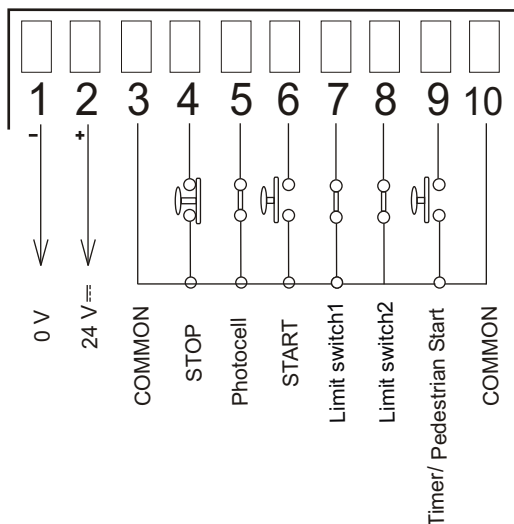
Instruct the user of the installation on the applied command systems and how to manually open the gate in case of emergency.

**What is not explicitly contained in these instructions is not permitted.**

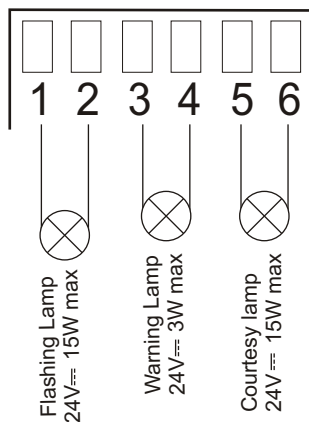


## CONNECTIONS

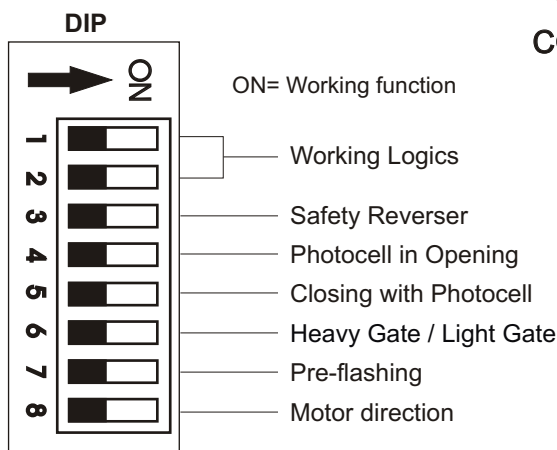
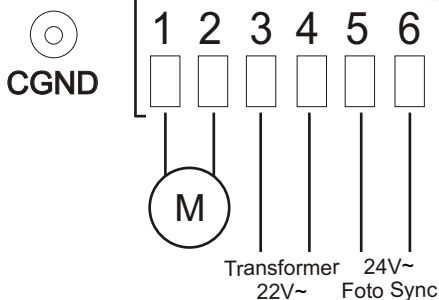
**CN3**



**CN4**



**CN1**



**Note:** the Photo Sync is a 24V~ connection to feed the synchronized photocells.



## SETTING OF WORKING LOGICS



### LOGIC WITH STEP BY STEP COMMANDS TYPE 1

The repeated start executes the following sequence: open-stop-close-stop-open-stop-close



### LOGIC WITH STEP BY STEP COMMANDS TYPE 2

The repeated start executes the following sequence: open-stop-close- open-stop-close-.....



### AUTOMATIC LOGIC (automatic closing)

The start executes only an opening when it's closed, in opening it stops and at the following start impulse it closes, during pause a start impulse closes immediately, in closing it re-opens. After the pausing time it re-closes automatically.



### CONDOMINIUM LOGIC (automatic closing)

The start only opens when the automation is closed, in opening it's not accepted, in pause it's not accepted (the counting of the set time continues), in closing it opens again. After the pausing time it re-closes automatically.

## OTHER FUNCTIONS

ON



3

### INTERVENTION OF THE SAFETY REVERSER IN CLOSING

**OFF:** It re-opens again and if there is the automatic closing is programmed after the pause time it closes. If, after two attempts, the closing has not been completed, the sliding door stays opened and waits for commands.

**ON:** It re-opens and waits for commands. (Not usable with condominium logic as a start impulse during pause is not accepted).

ON



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### PHOTOCELL IN OPENING

**OFF:** Photocell only in closing, in case of signal interruption the movement is reversed.

**ON:** Photocells active in both opening and closing, in case of obscuration in opening the movement will be interrupted and the gate continues to open when the photocells are free again, while in closing the movement is inverted only when the photocells are free.

ON



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### CLOSING FUNCTION AFTER THE INTERVENTION OF THE PHOTOCELL

**ON:** If a pause time is programmed it will be reduced to 3 seconds when the photocells are interrupted in opening or in pause (only in condominium logic).

ON



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### HEAVY GATE/LIGHT GATE

**OFF:** Administration of a light gate of up to 400 Kg (**Taurus 400 24V or Saturn 600 with less than 400 Kg weight**).

**ON:** Administration of a heavy gate with weight over 400 kg (**Saturn 24V 1500 or Saturn 600 with over 400 Kg weight**).

Furthermore:

**OFF:** Pedestrian opening time 12 sec. and anti-squeezing less sensible. (On light gates it is recommended to set on OFF).

**ON:** Pedestrian opening time 14 sec. and anti-squeezing more sensible. (On heavy gates it is recommended to set on ON).

**Nota1:** The pedestrian opening works like the other functioning logics.

**Nota2:** A start (totally open), in pedestrian opening, causes the complete opening of the gate.



**ON**



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### **PRE-FLASHING**

**OFF:** The flashing lamp activates simultaneously with the motor start.

**ON:** Pre-flashing which anticipates every movement of 3 sec. except of the reversing, due to the intervention of the safeties.

**ON**



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### **MOTOR DIRECTION**

Motor limit switch in closing in **clockwise** direction.

Motor limit switch in closing in **anticlockwise** direction.

## **INPUTS/OUTPUTS DESCRIPTION**

### **PHOTOCELL (N.C.)**

Input N.C., When the signal is interrupted during closing the gate re-opens immediately.

With DIP 4 on ON the intervention of the photocells causes the interruption of the movement also in opening and re-open immediately after their disengagement.

### **STOP (N.C.)**

Stops the automation whenever it is pressed.

A start impuls resets the movement.

### **START (N.O.)**

Input to command the automation in accordance with DIP1 and 2

### **TIMER / PEDESTRIAN (to be used as clock input)**

A short impuls causes the pedestrian opening, a closed contact with clock causes the opening with timer.

#### **1) PEDESTRIAN OPENING (N.O.)**

Opens for more or less one meter in accordance to the set logic, automatic or condominium. After the set pausing time, it re-closes automatically.

#### **2) TIMER (N.O.) (to be used as clock input)**

Input only for opening. Activated in Automatic and Condominium Logics it does not close until it is not disengaged.

**IMPORTANT NOTICE: All the N.C. contacts which are not used must be linked with the common.**

### **FLASHING LAMP:**

During the opening phase, it flashes once a second; during the closing phase, it flashes twice a second.

When the automation is opened and in automatic logic, the flashing lamp stays on during the whole pause time.

If DIP 7 is set on ON a pre-flashing of 3 seconds will be executed before the door starts to move.

### **WARNING LAMP:**

Follows the same logic of the flashing lamp

### **COURTESY LIGHT:**

Remains turned on during the whole movement of the motors.



## SETTINGS



### MOTOR SPEED REGULATION

Trimmer turned completely anti-clockwise = minimum speed

Trimmer turned completely clockwise = maximum speed

**ATTENTION: Pay very much attention, when adjusting the maximum slowdown speed, as it must be appropriated to the mechanical structure of the gate on which the automation is installed and respect the security laws in force.**



### SLOW DOWN SPEED REGULATION

Trimmer turned completely anti-clockwise = minimum speed

Trimmer turned completely clockwise = maximum speed

**ATTENTION: Pay very much attention, when adjusting the maximum slowdown speed, as it must be appropriated to the mechanical structure of the gate on which the automation is installed and respect the security laws in force.**



### REGULATION OF INTERVENTION THRESHOLD OF THE ANTI-CRUSHING DETECTOR

Trimmer turned completely anti-clockwise = maximum sensitivity (minimum thrust in case of obstacle).

Trimmer turned completely clockwise = minimum sensitivity (maximum thrust in case of obstacle).

After two consecutive interventions of the anti-crushing detector, even if in automatic logic, the automation rests opened waiting for commands.

**Adjust the sensitivity according to the security laws in force.**



**NOTICE: The setting of Trimmers and Dip Switches are read when the automation stops.**

**Do not hold the slowdown speed on the minimum with ammeter sensitivity on the minimum.**

## SELF-PROGRAMMING PROCEDURE OF THE CONTROL UNIT



Keep pressed while power supplying the control unit to start the selfprogramming procedure.

After having checked the right sliding of the gate and the electric connexions on the inputs/outputs, execute the following procedures:

1. Release the gate and put it manually in closing.
2. Restore the mechanical stop and manually move the gate until the lock has mechanically re-engagement.
3. Power supply the control unit keeping pressed P1 for 3 sec. until the motor starts in closing or in opening.
4. During closing /opening phase push P1 at the point where you want to fix the beginning of the slowdown.
5. At the end of the opening/closing phase the calculation of the pausing time will begin, now attend the desired pausing time and press pushbutton P1 again (every flash of the programming led corresponds to more or less 1 sec. of pausing time).
6. Now the closing/opening will be executed, during this phase push P1 again at the point where you want to fix the beginning of the slowdown in closing/opening.
7. Now the gate will reach the limit switch of closing/opening and will automatically finish the learning.

**If at the end of the selflearning the gate is open instead of closed set DIP 8 on ON.**

**Note:** If you want to exclude the slowdown skip the phases 4 and 6 during programming.



**Make sure that the gate during programming phase correctly reaches both limit switches. If this does not happen, increase the slowdown speed and/or decrease the ammeter sensitivity and repeat the self-programming starting from point 3.**



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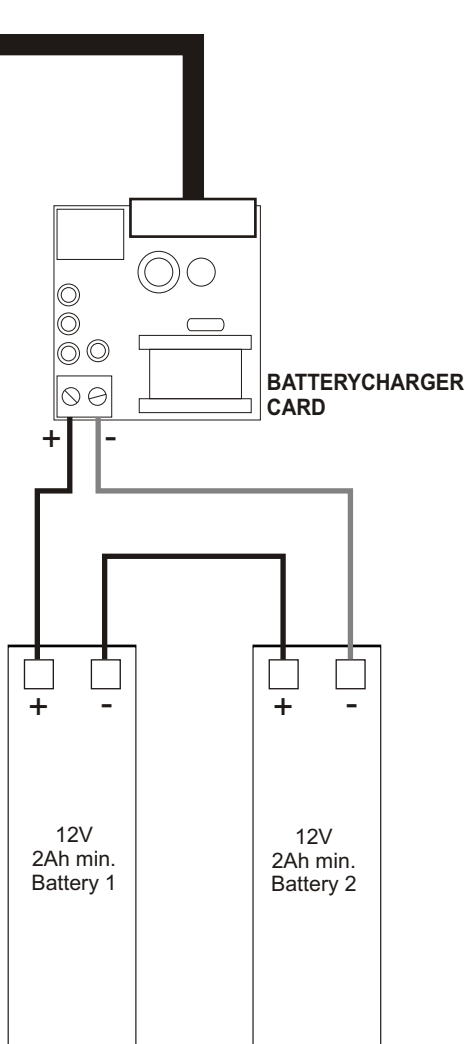
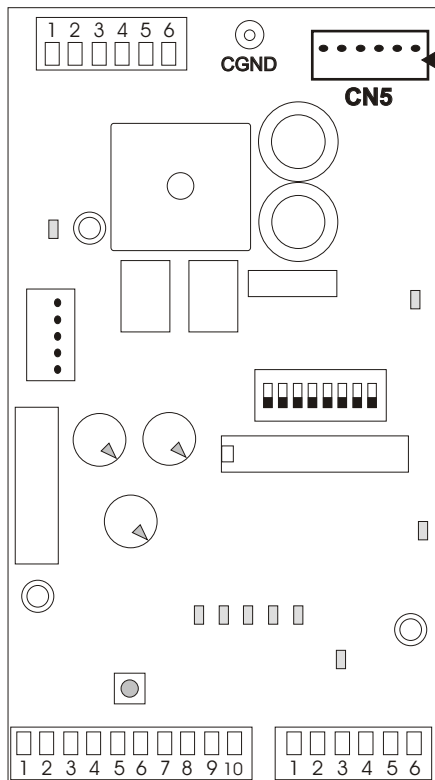
[seatec@seateam.com](mailto:seatec@seateam.com) (Uff. Tecnico)



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## CONNECTION OF BATTERIES AND BATTERYCHARGER CARD (OPTIONAL)

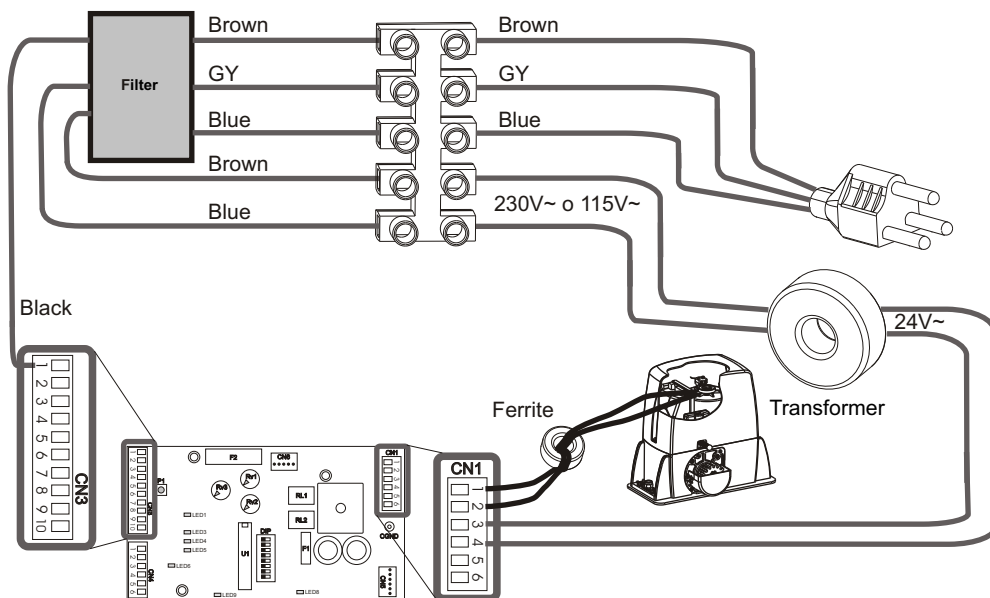
### GATE 1 24V CONTROL UNIT





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## KIT FILTER





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## SAFETY PRECAUTIONS

All electrical installation work should conform to current regulations.

A 16A - 0,030A differential switch must be incorporated into the source of the gate main electrical supply and the entire system must be properly earth bonded.

Remember to separate mains (230/115 V) carrying cables from low voltage control cables.

## SPARE PARTS

To obtain spare parts contact:

**SEAs.r.l. ZONA Ind.le, 64020 S.ATTO Teramo Italia**

## INTENDED USE

The electronic control unit GATE 1 24V AMMETER has been planned to be used exclusively as a control device for sliding gates, swing gates, garage-doors, folding doors, barriers.

## SAFETY AND ENVIRONMENTAL COMPATIBILITY

We recommend not to spoil the environment with product and circuit packing material.



### **CORRECT DISPOSAL OF THIS PRODUCT (WASTE ELECTRICAL & ELECTRONIC EQUIPMENT) - EUROPE ONLY**

(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

## STORAGE

STORAGE TEMPERATURES			
T <sub>min</sub>	T <sub>max</sub>	Humidity <sub>min</sub>	Humidity <sub>max</sub>
-40 °C	+85 °C	5% no condensation	90% no condensation

When being transported this product must be properly packaged and handled with care.

## MAINTENANCE AND OUT OF SERVICE

The decommission and maintenance of this unit must only be carried out by specialised and authorised personnel.

## LIMIT OF GUARANTEE

The GATE 1 24V AMMETER electronic control unit is guaranteed for a period of 24 months. The guarantee period starts from the date stamp printed on the unit. The GATE 1 24V AMMETER guarantee will be void if the unit has been incorrectly installed, not used for the purpose intended, tampered with or modified in any way. The validity of this guarantee only extends to the original purchaser of the unit.

**NOTE: THE MANUFACTURER CAN NOT BE DEEMED RESPONSIBLE FOR ANY DAMAGE OR INJURY CAUSED BY IMPROPER USE OF THIS PRODUCT.**

*SEA reserves the right to do changes or variations that may be necessary to its products with no obligation to notice.*