

## MPU/EO ORION WITH REVERSE LOGIC

(cod. 23005005)

### Circuit board layout

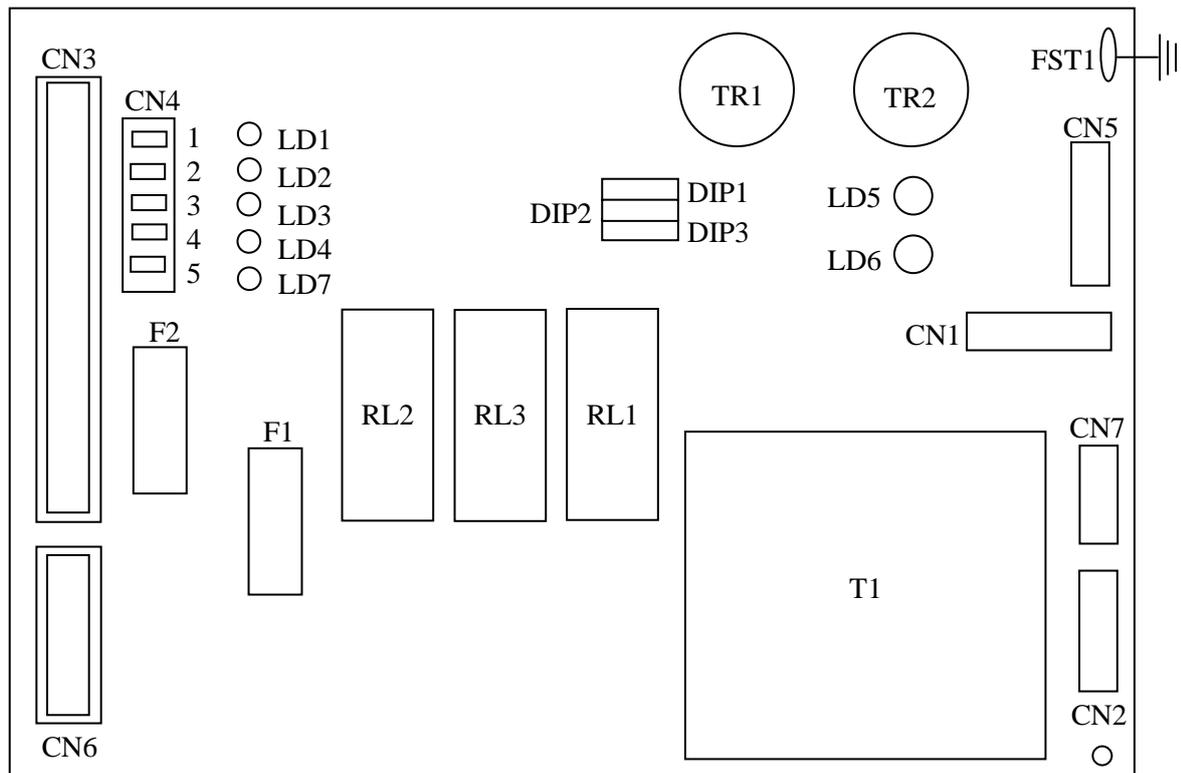


Fig. 1

**LD1:** Start Led  
**LD2:** Stop Led  
**LD3:** Photocell Led  
**LD4:** Pedestrian Start Led  
**LD5:** Close Limit Led (with DIP3 = ON)  
 Open Limit Led (with DIP3 = OFF)  
**LD6:** Open Limit Led (with DIP3 = ON)  
 Close Limit Led (with DIP3 = OFF)  
**LD7:** Indicator Led  
**F1:** Accessory Fuse 2 A  
**F2:** Motor Fuse 5 A (T)  
**T1:** Transformer  
**CN1:** Rev. Sensor Terminals  
**CN2:** Motor Terminals

**CN3:** Main Terminals  
**CN4:** Radio Receiver Terminals  
**CN5:** Limit Terminals  
**CN6:** Power Supply Connector 220/240V  
**CN7:** Motor Condenser Terminals  
**FST1:** Earth Tag  
**RL1:** Brake Relay  
**RL2:** Motor Relay  
**RL3:** Direction Relay  
**DIP1:** Excludes Reverse  
**DIP2:** Selects Functioning Logic  
**DIP3:** Selects Gate Direction  
**TR1:** Time regulation Trimmer  
**TR2:** Brake regulation Trimmer

## ELECTRICAL CONNECTIONS

### 1 – MAIN TERMINAL CONNECTION BLOCK (CN3 / CN6)

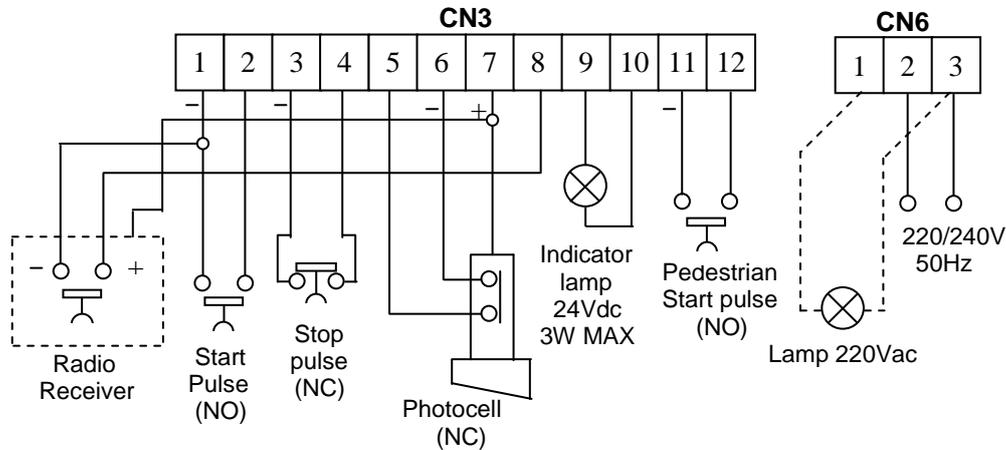


Fig. 2

**N.B. Terminals 3 & 4 (Stop) and 5 & 6 (Safety) are normally closed inputs. These terminals must be wire linked if a stop button or photocell is not being used.**

### 2 - BLADE TYPE MAINS EARTH CONNECTION (FST1)

To be connected to the incoming mains earth. This connection provides an earth for the double sided earth barrier tracks that are situated between mains and low voltage tracks.

### MPU/EO FUNCTION DESCRIPTION

The MPU/EO control unit has been designed to automate residential sliding gates up to 4 metres in length with a maximum weight of 400 Kg. The gate must run freely and not have any side to side play. It must also have open and close physical travel stops fitted before the automation is carried out. Plan the cabling requirements before installing the foundation plate. Leaving a spare cable duct into the unit can often be helpful. Mains and low voltage cables should be run separately.

#### 1. Electronic brake adjustment

The electronic braking action can be adjusted to give either a slow/soft or rapid/hard stop to the gate movement by adjusting Trimmer TR2 (Fig. 3). The electronic braking action is started by the proximity limit switch registering the presence of the limit plate.

#### 2. Electronic reverse device

The friction clutch is located on the top of the motor and should be adjusted as lightly as practical, the maximum force recommended to be exerted at the leading edge of the gate is 15 Kg. The emergency release key can be used to adjust the clutch. If the gate is obstructed when closing, the obstacle is detected by the motor revolution counter and the gate is stopped and reversed. If an obstacle is detected when the gate is opening, the gate is stopped. The electronic reverse device is activated by the slipping action of the friction clutch that is coupled to the electric motor. The clutch should be adjusted so to be allowed to slip when the gate comes into contact with minimal obstruction. To decrease the clutch pressure, turn the adjusting screw anti-clockwise; to increase the clutch pressure, turn the adjusting screw in a clockwise direction. The clutch pressure must always be adjusted in every instance to take into account the weight and running condition of the gate being automated. The pressure must never be excessive.

### PHOTOCELL SAFETY IS RECOMMENDED FOR ALL SLIDING GATE LOGIC SELECTIONS

#### 3. Logic

Logic is selected by DIP2. With DIP2 = OFF, Semi-automatic or push to open/push to close logic is selected. DIP2 = ON selects Automatic logic and adjusts the pause before closing time (5-120 s.). A Pedestrian opening input is available on terminals 10 and 11 if required.

### SETTING UP THE GATE STOPPING POSITION

Only tack weld the Limit Place to rack while setting up. A gap of 5-8 mm. is required between the Limit Plate and Limit Switch. The Limit Switch is located on the side of the casing directly above the pinion. The Limit

Switch is an Induction type and contains separate sensing areas located at each end of the switch. As the steel Limit Plates pass in front of the switch a signal is sent to the Circuit Board. The Limit Plates are required to activate each relevant limit – 50 mm. (± 10 mm.) before the gate physically strikes a travel stop. Open and Close Limit Led indicators on the circuit board will assist in this setting up process. Fully weld the Limit Plate in position after satisfactorily testing. First fully close the gate up to its physical stop. Then open back 3 to 5 cm. Position the Limit Plate on top of the drive rack in a position that will register and activate the closed limit switch and tack weld in place. Then repeat the process for the open limit. Only fully weld the limit plates in place when satisfactory testing has taken place.

### BRAKE REGULATION

To regulate the intensity of the braking action please proceed as follows:

1. Switch off the electrical supply of the operator.
2. Turn the brake trimmer (TR2) completely clockwise.
3. Use the operator manual release to disconnect the gate drive mechanism, open the gate halfway (clear limit stops).
4. Reconnect the gate using the operator manual release (as described in the instructions).
5. Restore the electrical supply to the operator.
6. Give a Start pulse.
7. The gate will travel in the closed direction and abruptly stop when the closed limit is reached. Regulate the Trimmer (TR2) to provide the required intensity of braking.

### Please note:

- 1) On an installation with a left hand closing gate, any trimmer adjustment made will be read and changed at the end of every closing cycle. On right hand installations, any trimmer adjustment made will be read and changed at the end of every opening cycle.
- 2) For poor running gates, first turn the Trimmer (TR2) fully clockwise then turn the Trimmer back approximately a third of a turn.

### GATE CLOSING DIRECTION SELECTION

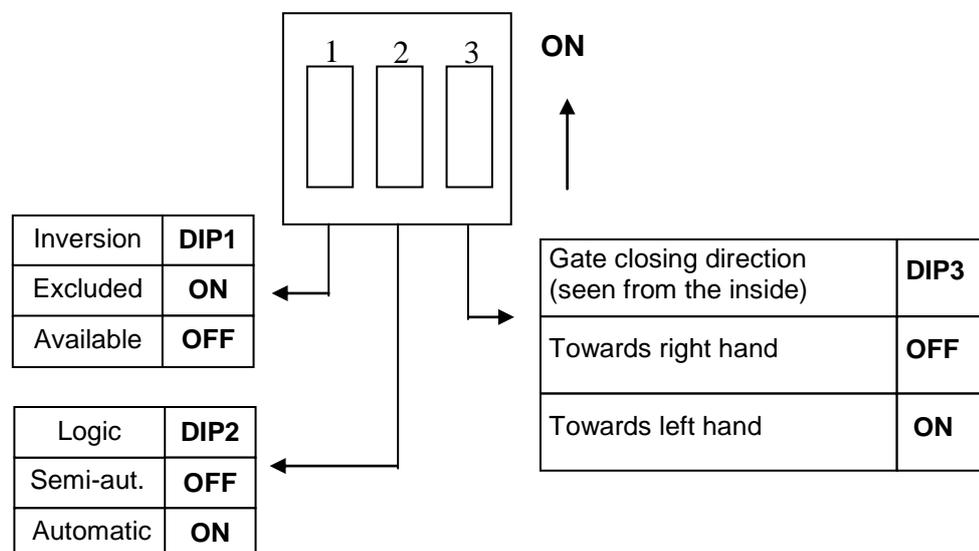
This selection is made on DIP Switch 3. Looking at the gate from the inside:

- put DIP3 **off** if the gate closes towards the right hand side;
- put DIP3 **on** if the gate closes to the left.

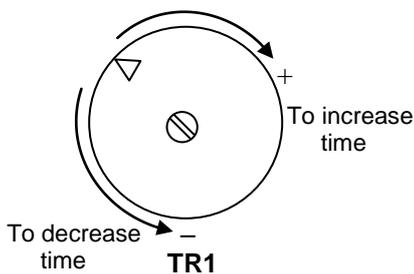
### DIAGNOSTIC FUNCTION

The micro-processor control unit has a diagnostic feature that will flash Led 7 every 2 seconds if a limit fault is detected. If a revolution counter fault is detected, Led 7 will flash twice every second. It is possible to temporarily exclude the revolution counter function by DIP1 = ON.

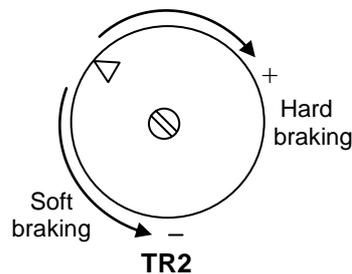
### PROGRAMMING TABLES



### TIME REGULATION TRIMMER TR1



### BRAKE ADJUSTMENT TRIMMER TR2



### RADIO CONNECTION

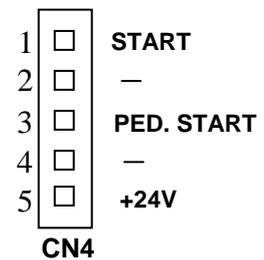


Fig. 3

### 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 run separate mains (240 V) carrying cables (supply and motors). Also all low voltage control (push button, photocell, radio etc.) cables should be run in separate ducts to prevent from mains interference.

**Note:** Use “cable clips” and/or “duct/box pipes” fitting close to the control panel box so to protect the interconnection cables against pulling efforts.

### SPARE PARTS

To obtain spare parts contact: **SEA s.r.l. - ZONA Ind.le, 64020 S.ATTO - Teramo - Italia**

### INTENDED USE

The MPU/EO electronic control unit has been designed to be solely used as control unit for the automation of sliding gates.

### SAFETY AND ENVIRONMENTAL COMPATIBILITY

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

### CONFORMITY REQUIREMENTS

The electronic control unit MPU/EO conforms to the following:

89/336/CEE (Rule on the Electromagnetic Compatibility)

73/23/EC (Electric Safety)

### STORAGE

STORAGE TEMPERATURES			
$T_{min}$	$T_{max}$	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 MPU/EO electronic control unit is guaranteed for a period of 24 months. The guarantee period starts from the date stamp printed on the unit. The MPU/EO 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.*