

Control board for electromechanical gearmotors

# HERMES



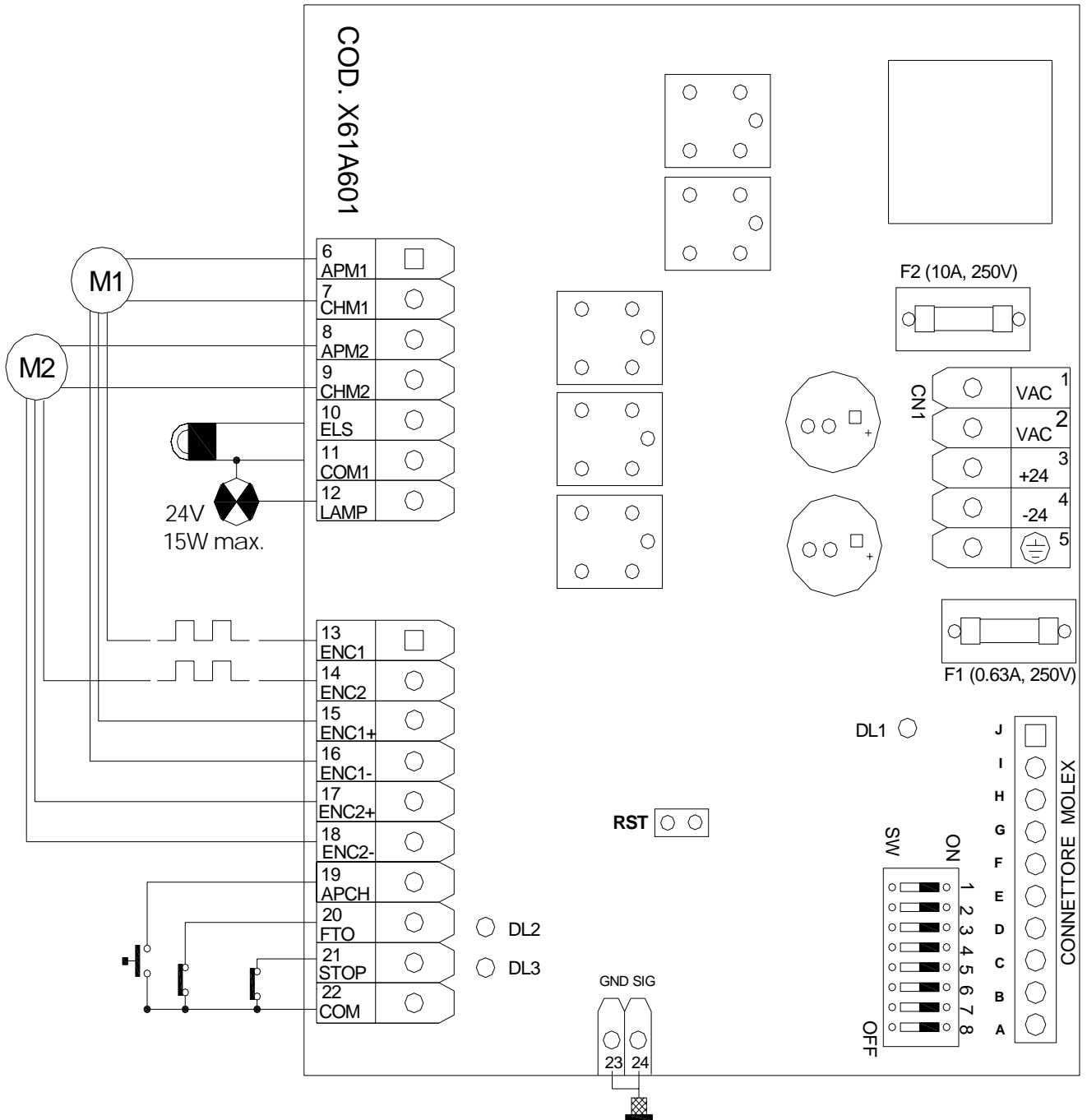


## Attention !

- The present user manual is designed for personnel skilled in installation, not for the final user; the electrician is then due to inform the user about modes of use of the device, possible danger and about the necessity to apply periodical maintenance.
- The installation can be carried out only by skilled personnel and in compliance with the rules currently in force regarding the automated locks. In particular, the installation requires the following of the regulations 89/392 and norm EN 12453 and EN 12445..
- Use only original parts. Stagnoli do not take any responsibility for damage caused by using unoriginal parts.
- Before operating the device, make sure that the power supply has been cut off.
- The feeding cable can be connected only with feeders supplied with proper electric protection. In particular, make sure that the distance between the contacts is of at least 3.5 mm in order to avoid omnipolar disconnection from the grid.
- Take into consideration the safety devices to be installed and the place where they should be positioned. Always have an emergency stop device available to allow proper detachment of the feeding cable.
- Do not operate the machine with wet or damp hands or feet and avoid exposing the machine to atmospheric conditions.
- The device should be used only according to the purpose that it has been designed for, any other use is to be considered as improper and therefore dangerous.
- Maintenance, including possible replacement of courtesy light unit , can be carried out only by skilled staff.

## TECHNICAL SPECIFICATION AND CONNECTION DIAGRAM

The electronic control unit for 24V electromechanical gear motors of Stagnoli, is designed for controlling operations of 24 Vdc motors, used for the activation of gates with 1 or 2 shutters; the movement is controlled by the encoder and there is no need to use limit switches.



## ELECTRIC CONNECTIONS

1. Neutral power supply from transformer (20Vac)
2. Phase power supply from transformer (20Vac)
3. Auxiliary output 24Vdc – 500mA (positive pole)
4. Auxiliary output 24Vdc – 500 mA (negative pole )
5. Connection of grounding
  
6. Output 1° electric motor 24Vdc (opening)
7. Output 1° electric motor 24Vdc (closing)
8. Output 2° electric motor 24Vdc (opening)
9. Output 2° electric motor 24Vdc (closing)
10. Output of electromagnetic lock
11. Common.
12. Blinking logic output (24V – 15W max.)
  
13. Signal input Encoder positioned on 1° motor.
14. Signal input Encoder positioned on 2° motor.
15. Power supply Encoder positioned on 1° motor (+)
16. Power supply Encoder positioned on 1° motor (-)
17. Power supply Encoder positioned on 2° motor (+)
18. Power supply Encoder positioned on 1° motor (-)
19. Electric contact normally opened by Open/Close Command.
20. Electric contact normally closed by the photocell.
21. Electric contact normally closed by the Stop button.
22. Common.
23. Input antenna ( braided wire).
24. Input antenna (signal).

### Connections radio card (CONNECTOR MOLEX)

- |    |  |
|----|--|
| A. | Input antenna (signal).                                  |
| B. | Input antenna (braided wire)                             |
| C. | Power supply receiver: 12V dc (negative pole)            |
| D. | Power supply receiver: 12V (positive pole)               |
| E. | Disconnected   |
| F. | Disconnected   |
| G. | Input receiver channel (parallel to input of Open/Close) |
| H. | Input receiver channel (parallel to input of Open/Close) |
| I. | Disconnected   |
| J. | Disconnected   |



- **N.C Contacts that are not used should be short circuited.**
- **N.O Contacts that are not used, should be left.**
- **Double insulated cables should be used when connected to low voltage devices.**
- **In order to follow the regulations of “ Low Safety Voltage” rule (EN 60335-1), the single insulated cables used for 230V supply should be equipped with additional insulation of at least 1 mm, and should be at least 4 mm from those with low voltage.**
- **The cables used for power supply of motors, should be of at least 2.5 mm<sup>2</sup> and the length should not exceed 12 m;**
- **IT IS COMPULSORY POSITIONING THE EARTH WIRE CONNECTION (TERMINAL 7)**

## DEFINITIONS OF CONTROL UNIT PARTS

F1 – FUSE AUXILIARY OUTPUT ( 0.630A, 250V):

protects the center in case of short circuits and faults that may emerge in auxiliary devices.

F2- FUSE TRANSFORMER INPUT(10A, 250V):

protects the center in case of short circuits or faults that may emerge at the transformer input.

DIP SWITCH FOR SELECTION OF FUNCTION MODES:

SW – 1 indicates torque of 1<sup>st</sup> motor and 2<sup>nd</sup> motor (electric friction M1 and M2).

SW – 2 allows the selection of automatic closing.

SW – 3 indicates the operational sequence of the command Open/Close.

SW – 4 allows the set up of the function mode for the photocells.

SW – 5 allows the insertion " battering ram" during the opening phase.

SW – 6 allows selection of delaying the second in respect to the first shutter.

SW – 7 allows selection of operating with 1 or 2 motors.

SW – 8 allows adjustment of the mains for automatic cycle and intervals.

LED – SIGNALLING:


DL1 – (RED): a Led which signals whether the central unit is plugged( on) or not( off).

DL2 – (RED): a Led which signals activation of the photocell in the closed mode; the LED automatically switches off when the photocell detects an obstruction during closing.

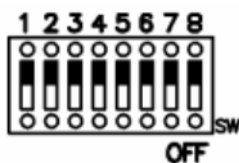
DL3 – (RED): a Led which signals blockade of the gate; the LED automatically switches off when the command Stop is activated.

RST: Indicates a couple of Pin that short-circuited, for example by means of screwdriver, allows RESET of the control box.

## INPUTS/OUTPUTS DEFINITIONS

- **Input power supply from transformer** : 20V~ +/- 10%.
- **Motors outputs** (24V , 100W): the motor connected to the terminals 6 - 7 (M1) starts first in the phase of opening; the motor connected to the terminals 8 -9 (M2) starts first in the phase of closing.
- **Blinking logic output** (24V, 15W max): the unit allows to signal movement of the gate( blinking), the interval during the automatic operation (steady light for 3 seconds) and possible activation of the safety device during the same interval ( blinking maximum 10 seconds);
- **Open/Close input**: enables the sending of closing and opening commands of the gate according to the sequence that depends on the position of the dip switch SW-3.
- **Photocell input**: This is an input that depends on the sw-4 dip-switch setting.
- **Stop input**: if the Stop command is activated, all of the possible cycles and every starting command are disabled. The Stop command during the motion causes immediate stop of the gate. If the Stop command is given during the interval, the work cycle is interrupted until the new command of closing.

## FUNCTIONING MODES



The unit may control various functions based on the combinations of the Dip Switches:

DIP	FUNCTION	ON	OFF
SW - 1	ELECTRONIC FRICTION	The motors M1 and M2 supply the maximum thrust.	The motors M1 and M2 supply the minimum thrust.
SW - 2	AUTOMATIC CLOSING	The automatic operation is activated	The semi-automatic operation is activated
SW - 3	COMMAND OPEN/CLOSE	impulse opens - impulse blocks - impulse closes	impulse opens - impulse closes
SW - 4	PHOTOCELL SETTING	the activation of photocells causes, during the opening of the gate, its immediate stop and during the closure of the gate, its immediate stop and reopen.	The photocells are disabled during the opening phase, stops and opens the gate during the closing and during the interval.
SW - 5	BATTERING RAM	The M1 shutter is closed for a second to free the electric lock and then the opening restarts.	The opening phase is not provided for the use of the battering ram.
SW - 6	SHUTTER DELAY	The M2 delay is 8 Sec.	The M2 delay is 4 Sec.
SW - 7	FUNCTIONING ½ MOTORS	Activated two - motors operation mode.	Activated one- motor operation mode.
SW - 8	AUTOMATIC LEARNING	Proceeds the operation of automatic learning of the shutter movements and bringing to automation the closing time.	The automatic learning phase is deactivated.

## PROGRAMMING

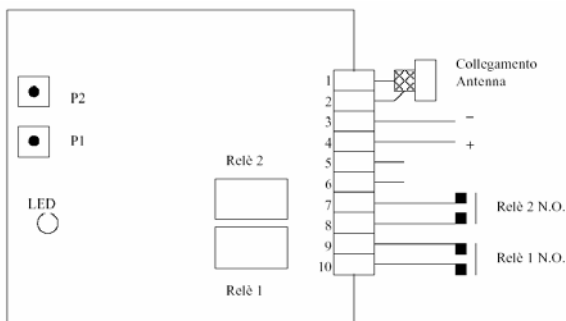
The programming of the central unit requires the following steps:

- Manual opening of the gate.
- Program SW - 8 = ON, the blinking unit will emit a steady light to inform the user that the programming procedure has been started.
- Press the Open/Close button or the radio control button once; the M2 shutter will close completely, followed, after 2 seconds, by the other one (M1). If the shutters are activated in the opening phase, power supply should be cut off and invert the connections in the motors in order to enable proper programming.
- After closing the two shutters, starts the opening phase (automatically), first activating the M1 shutter and then the M2 one until reaching the mechanical positive stops in the opening phase (the process of reaching the end points proceeds in slow motion).
- From the moment when the shutters have reached the mechanical stops in the opening phase, the counting of automatic closing time starts; when the requested time has passed, one should press once again the Open/ Close button or the radio control button, in order to control the closing of the gate.
- When the closing operation has come to an end, program SW - 8 = OFF;
- End of programming.

## NOTE

1. **In order to secure always the safety of the automation and to enable the proper carrying out of the programming operation, it is necessary to use the mechanical positive stops at the end of the gate's course ( in opening and in closing).**
2. The electric friction can be adjusted to make the two motors more or less sensitive to obstruction; if an obstruction is detected, in the opening or in the closing phase, the central unit, at first, reverses the course of the gate. If the obstruction is detected again, the central unit blocks the operation of the gate deactivating, if programmed, the process of automatic closing; it is necessary to give a new command. If the obstruction is detected for the third time, the central unit starts the emergency mode by opening the gate completely to the mechanical positive stops in the opening and then the gate closes automatically( if the automatic closing is programmed).
3. During the opening phase in the automatic mode, with SW – 3 = ON, every Open/Close command( terminal 19) will be inactive, whereas during the closing phase the two-leaf movement is inverted with each impulse (CONDOMINIUM MODE). If the semi-automatic functioning is activated, with SW – 3 = ON, every Open/Close command will cause the inversion of gate leaf movement, both during the opening and closing phase.
4. The Open/Close command, after the power supply is cut or reset(by touching the two Pins marked as RST with the screwdriver point), provokes first the complete opening of the gate, and then the automatic closing up to the proper mechanical positive stops.
5. During the regular mode, the central unit blocks the gate leaves a few centimeters before the end point in the opening, in order to avoid striking the mechanical stops.

## RECEIVER (OPTIONAL)



The receiver connected with the central unit is of the 2 channels type with **the 2nd channel connected parallel to the Open/Close input (APCH)**; the receiver can store up to 127 different codes. The memory content is saved also when the power supply is cut off.

## STORING THE CODES FROM THE TRANSMITTERS

- **Press the P1 button 2 times (wait 1 second before pressing P1 the second time).**
- Wait until the LED switches on with fixed light
- Send the code to be stored( for at least 1 second) by the transmitter;

## ERASING THE CODE FROM THE MEMORY

- Press the P2 button situated on the receiver for at least 1 second;
- Send **the code to be erased** for at least 1 second.
- If you want to erase **all stored codes**, press P2 for about 10 seconds until the LED goes out.

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