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# DESCRIPTION OF THE CONTROL UNIT

**PRG12PP / PRG12ELS** has been planned by V2ELETTRONICA to control double- and one – door gates, driven by means of 12V D.C. actuators.

Benefits resulting from the very low voltage automations using **PRG12** are as follows:

- No risk of accidental electrification of the metallic masses which are connected to the power plant (actuators, doors and accessories).
- Anti-squashing safety, carried out by means of a stress detector on the motor ensuring the door movement stop in case the photocells do not detect the presence of an obstacle.
- No blackout function by means of a lead accumulator enabling the system operation even if no power is supplied.
- Door slowing down in the end of stroke area, to prevent noisy closings and door recoil.
- Time machine auto-learning: during the program phase, the system carries out a recording cycle concerning the door opening and closing times, so simplifying the calibration and adjustment operations.

The terminal inlets are equipped with the following components:

- Infrared bearing inlet (PHOTOCELLS).
- Stop button inlet (STOP).
- Opening button inlet (START).

The terminal outputs are equipped with as follows:

- Motor 1 and Motor 2 feeding.
- 12 Volt blinking lamp (max 10 W).
- 12 Volt D.C. accessory feeding.
- 12 Volt D.C. electrolock.
- CH3 auxiliary relay output. } **only PRG12ELS**
- CH4 auxiliary relay output. }

This system can record up to 48 Personal Pass transmitters.

There is a super heterodyne receiver equipped with a narrow band filter inside the antenna.

# PROGRAM

As soon as these automation components have been connected according to the indications shown on the silk-screen printing and on the card as well, with reference to the hereabove page, we kindly recommend to set up the opening and closing time auto learning. The control card is equipped with LED indicators (L1, L2), a micro switch selector (SW2) to set up the operation logic and two buttons to start the program phase as well.

## TIME AUTO-LEARNING

Before starting, select “one door” or “double door”, by means of the SW2, according to the kind of installation required (see table at page 29), and put the “light” or “heavy” door selector on “light door” Press the AUTO button on the control card and keep it pressed for 10 seconds at least. LED L1 will start blinking and, at the same time, the two motors (one at a time) will work by carrying out two opening and closing cycles respectively.

BE EXTREMELY CAREFUL DURING THE TIME AUTO-LEARNING AVOIDING TO IMPEDE THE DOOR MOVEMENT.

N.B. If during the self-learning movements one of the two doors stops before closing or opening, put the “light door” or “heavy door” selector on “heavy door” (see table at page 29) and repeat everything again. This could happen if the gate doors are too heavy or the friction is too much. Now, proceed with the transmitter recording

## TRANSMITTER RECORDING

To carry out the transmitter recording proceed as follows:

- Press the RX key and keep it pressed for 2 seconds.
- Led L1 will turn on.
- Within 10 seconds, transmit by means of the remote control device by pressing one of the 4 keys.
- Led L1 will turn off.
- Proceed in the same way with the other transmitters.

As soon as the memory is full (after 48 recorded transmitters) Led L1 carries out 5 triple blinkings.

To **cancel** the 48 codes proceed as follows:

- Press the RX key and keep it pressed for 10 seconds.
- Led L1 will carry out 5 single blinkings to show that all the memory content has been removed.

Once recorded, the transmitter key functions are setup as follows:



KEY	FUNCTION
1	START command
2	START PEDESTRIAN command
3	CH3 COMMAND
4	CH4 COMMAND

The **START** command allows to activate the opening of the door/s during the whole stroke.

The **START PEDESTRIAN** command allows to activate only one door opening, the one being connected to the M1 terminals, for half time as to the start time.

**CH3** command is used to close the CH3 (as shown in the silk screen printing) auxiliary relay contact to the terminal.

By pressing the key 3, the contact (which is usually open) will be closed during all the transmission time, to be opened again as soon as the key is released.

This function may be used to control auxiliary functions.

**CH4** command is used to close the CH4 (as shown in the silk screen-printing) auxiliary relay contact to the terminal.

By pressing the key 3, the contact (which is usually open) will be closed by means of a mono- or bistable logic, according to the 6-position SW2 micro switch program (see the following paragraph).









This function may be used to control auxiliary functions.

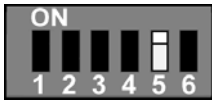

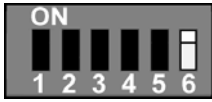

## FUNCTION SETUP

Proceed with the customization of the operation logic.

This kind of operation which aims to customize your opening system, shall be carried out by means of the 6-position SW2 micro switch, which is on the card.

The following table will show you which kind of function you may select.

SWITCH	FUNCTION	POSITION	DESCRIPTION
1	ANTI-SQUASHING SENSOR SENSITIVITY		High sensitivity (see the auto-learning phase)
			Low sensitivity (see the auto-learning phase)
2	PAUSE TIME		30 seconds
			1 minute
3	AUTOMATIC CLOSING		Automatic
			Manual
4	ONE OR DOUBLE DOOR		Double door
			One door

5	START COMMAND		Normally closed terminal contact
			Normally opened terminal contact
6	CH4 AUXILIARY RELAY FUNCTION		Monostable logic
			Bistable logic

**Table 2**

### 1 ANTISQUASHING SENSOR SENSITIVITY

It will work in case of stress on the door, resulting from the presence of an obstacle within the movement area and exceeding a certain value. The sensitivity threshold can be selected.

We recommend to set it on “high sensitivity”, first; but if during winter time the gate jams without any clear reason, then set it on “low sensitivity”.

### 2 PAUSE TIME

When the following situations occur, the door movement stops for a period called "pause time".

- DURING THE OPENING

If the anti-squashing sensor or a START command intervenes, the door movement will stop and reverse for 4 seconds to clear the area involved, then it will stop again on “pause”. If the AUTOMATIC CLOSING function has been enabled, after the pause time (30 or 60 seconds) the gate will be closed again. Otherwise, the gate will need another START command to end its cycle.

- DURING THE CLOSING

If the anti-squashing sensor or a START command intervenes, the door movement will stop and reverse for 4 seconds to clear the area involved, then it will stop again on “pause”. If the AUTOMATIC CLOSING function has been enabled, after the pause time (30 or 60 seconds) the gate will be closed again.

### 3 AUTOMATIC CLOSING

If it is enabled, it allows the gate to be closed after the pause time.

### 4 ONE OR DOUBLE DOOR

It allows to select the type of gate. If it deals with a one-door gate, connect the actuator to the M1 terminals.

### 5 START COMMAND

It allows to select the START button contact time: normal closed or normal open.

### 6 CH4 MONOSTABLE O BISTABLE RELAY

If it deals with a monostable relay, it will be energized at the same time of the key 4 pressure of one of the recorded transmitters and it will be de-energized as soon as the key is released; on the contrary, if it deals with a bistable relay it will be energized at the first key 4 pressure of one of the transmitters, remaining so energized until the second transmission.

# VISUAL INDICATORS

The system has been planned to provide for visual indications about the operation status in normal or anomalous conditions.

## **BLINKING LAMP.**

Blinking lamp off:

- The door is closed: the system is waiting for a remote control device opening signal or a key contact opening signal.
- The door is open: the system is waiting for a remote control device closing signal or a key contact signal (manual program selected by means of switch 3 on OFF)

The blinking lamp is rapidly blinking: the gate is opening.

The blinking lamp is normally blinking: the gate is closing.

The blinking lamp is slowly blinking: the gate is on pause and the AUTOMATIC CLOSING has been setup.

The blinking lamp turns on for five seconds as soon as it receives the signal and then it turns off: the system tried to close the gate but the infrared system contact was not closed.

The blinking lamp turns on by means of a START command without any door movement:

when the key 1 or 2 of one of the recorded transmitters is pressed or a key contact is used and the blinking lamp is on during all the transmission/contact closing time, there is a system SHUTDOWN, that is to say that the power plant detects an open contact to the BL terminals.

Since the STOP button is optional, if it has not been installed, it could be the case that the jumper on the BL terminals is instable; then, it will be necessary to check it and repair or replace it, if necessary.

The blinking lamp is blinking permanently:

this may be caused by a defect during the door opening or closing phase, a wild wind that does not allow any door movement, for instance.

To restore the situation: act on the key contact and press the remote control device button *at the same time*, then the normal cycle will start again.

## **WARNING!**

The remote control device button and the key correctly turned shall be kept pressed during all the closing or opening time.

The resulting movement is "one door at a time" and as soon as the user realizes that the first door stroke is finished, he shall immediately release remote control device button and key. The blinking lamp will always be blinking to show that the same operation shall be carried out on the other door.

## **LED ON THE CONTROL CARD**

On the control card there are two LED luminous indicators, which the silk screen-printing shows as L1 and L2.

As for L1, the indications it provides for have been already examined in the program phase. (see table 2).

L2 is used to show the charge status of the card-connected accumulator.

LED ON: the accumulator is on charge

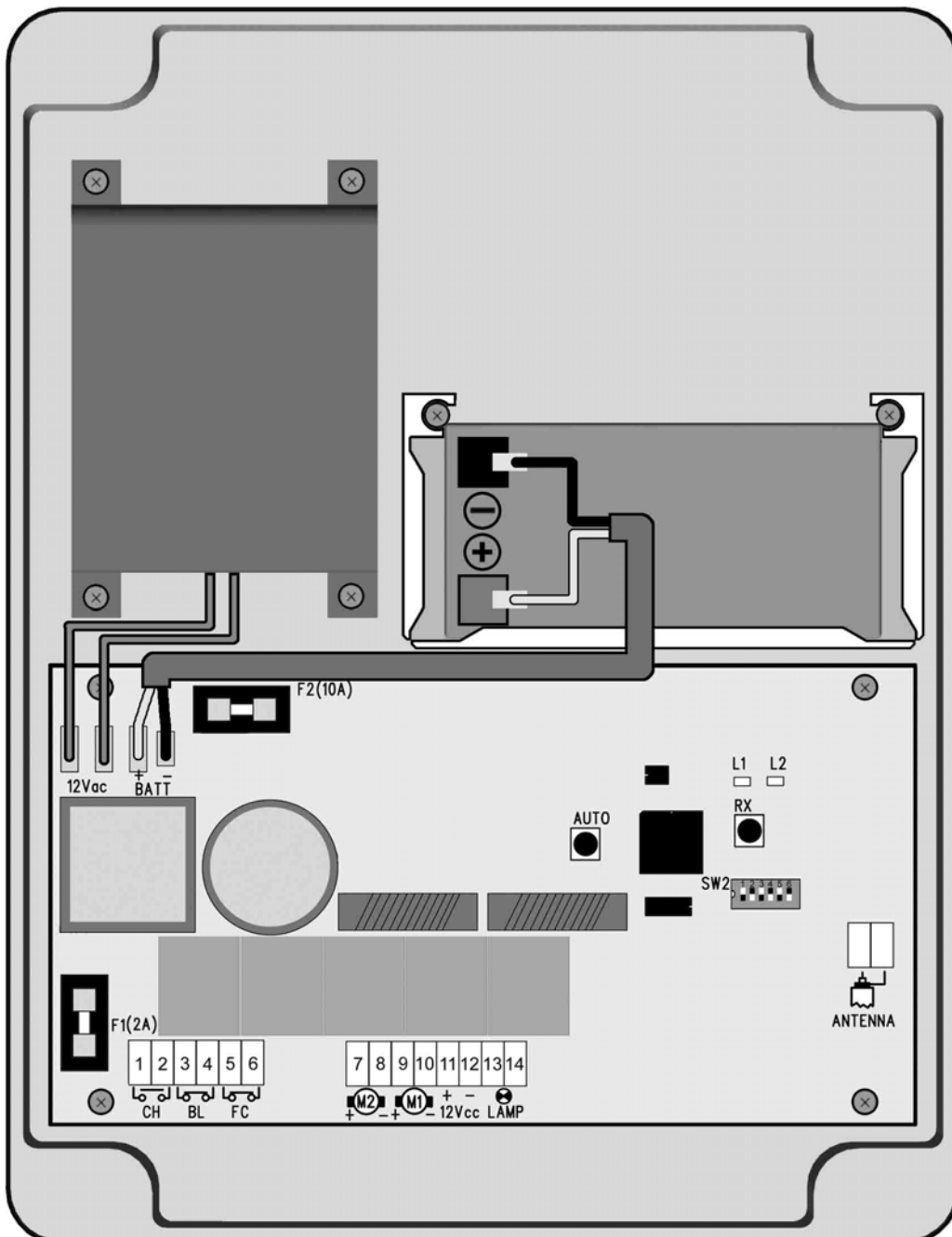
LED OFF: the accumulator is charged

# INSTALLATION OF THE ACCUMULATOR

If the *antiblackout* function is required, a no-maintenance lead accumulator needs to be connected by means of special coupling terminals, by strictly complying with the silk screen printing polarities of the control card.

The accumulator shall have the following characteristics:

CHARACTERISTICS OF THE ACCUMULATOR	
TYPE	LEAD AND WITH NO MAINTENANCE NEED
VOLTAGE	12 VOLT
CAPACITY	1,3 AMPERE / Hr



## SPECIFICATIONS

Power supply	230 VAC, 50 Hz
Motors maximum load	100 W
24-VAC attachment maximum load	10 W
Room work temperature	-20 ÷ +60 °C
Fuses	F1 = 2 A F2 = 10 A
Dimensions	210 x 275 x 100 mm
Weight	2,5 Kg
IP	55

### WIRING



The system wiring shall be carried out in compliance with the laws in force concerning the installation of electric plants.

The control card is fed by a double insulation safety transformer, equipped with a 12 Volt ~outlet.

Connect the transformer to the 230 v A.C. feeding network by means of a bipolar cable having a 1,5 mm<sup>2</sup> min. diameter.

Arrange for a magnetothermal switch which shall be placed upstream the gate feeding line (according to EN 60335-1, contacts shall have a 3 mm distance, at least).

The card plastic case has an IP55 insulation; to connect flexible or rigid pipes, use pipefittings having the same insulation level.

# TERMINAL CONNECTIONS



TERMINAL	CONNECTION DESCRIPTION
1 , 2	Connect to the START button/s (it deals with a normal open or normal closed contact, which can be programmed by means of switch 5).
3 , 4	Connect to the STOP or SHUTDOWN button (it deals with a normal closed contact). If it is not used make a jumper with the common contact.
5 , 6	Connect to the normal closed contact of the infrared presence bearing (PHOTOCELL). If it is not used make a jumper with the common contact.
7 , 8	Connect to the motor 2 according to the silk screen printing polarities. DO NOT use this output if it deals with a one-door gate.
9 , 10	Connect to the motor 1 according to the silk screen printing polarities. Use this output if it deals with a one-door gate.
11 , 12	Output for the feeding of the infrared bearing system (PHOTOCELL). Voltage 12 Volt D.C., 500 mA max. current.
13 , 14	Connect to the signaling blinking lamp. Voltage: 12 Volt, lamp: 10 W.
15 , 17	Connect to an electric lock. Voltage: 12 Volt, 3 A max. current.
16	Not used.
18 , 19 , 20	CH3 auxiliary outlet. Max voltage: 250 Va.c. , 10 A max. current.
21 , 22 , 23	CH4 auxiliary output. Max voltage: 250 V a.c., 10 A max. current .
24	Connect to the antenna cable central connector. Use an antenna having a 433 MHz rated frequency. Alternatively, connect a conductor having a 17cm main insulation.
25	Connect to the antenna cable shielding.

