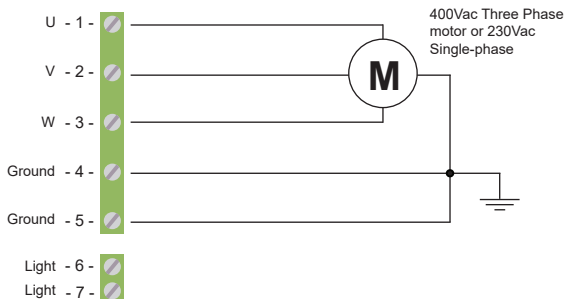


- Three-phase/Single-phase control panel for 1 motor 400/230 Vac motor 2Hp.
- Electronic obstacle detection, inside/outside brake, 4 functions mode, radio decode supplied. Deactivation of the photo beams when the curtain gets down.



START-S9-PV

Operating guide for the installer



400 Vac Selection - 8 - Make a link:
 230 Vac Selection - 9 - 8-10 : for 400Vac power supply
 Selection of the power supply -10- 9-10: for 230Vac power supply



Outs. Brake (NC) -14-
 Outs. Brake (NO) -15-
 Outs. Brake (COM) -16-

24 Vac (Max 500mA) -29-
 24 Vac (Max 500mA) -30-

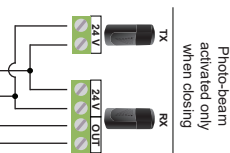
Common COM
 Common COM

LSO -17- N.C.
 LSC -18-
 Stop -19-
 Photo -20- N.O.
 OPEN -21- N.O.
 CLOSE -22- N.O.
 START -23- N.O.
 Pedestrian -24-
 NC safety edge -25- Make a link COM to exclude
 8K2 safety edge -26- Close JP1 to exclude

TEST -27-
 TEST -28-

Output for Dry contact for 2nd Ch OUT2
 Output for Dry contact for 2nd Ch OUT2
 - Cable sock Antenna GND
 + Antenna ANT

Power supply of the ACCESSORIES 12 VAC
 Power supply of the ACCESSORIES 12 VAC



Foreword

This manual provides all the specific information you need to familiarize yourself with and correctly operate your unit. Read it very carefully when you purchase the instrument and consult it whenever you have doubts regarding use and before performing any maintenance operations. Nologo has the right to modify the product without previous notice.

Environmental protection measures

Information regarding the environment for customers within the European Union. European Directive EC 2002/96 requires that units bearing this symbol on the unit and/or on the packaging be disposed of separately from undifferentiated urban wastes.



The symbol indicates that the product must not be disposed of with the normal household wastes. The owner is responsible for disposing of this product and other electrical and electronic equipment through specific waste collection facilities indicated by the government or local public agencies. Correct disposal and recycling help prevent any potentially negative impact on the environment and human health. To receive more detailed information regarding disposal of your unit, we recommend that you contact the competent public agencies, the waste collection.

Index





| Par. | Description | Pag. |
|----------|---|-----------|
| 1 | Introduction | 3 |
| 1.1 | Safety precautions | |
| 1.2 | Symbols and warning | |
| 1.3 | Type of installation | |
| 1.4 | Preliminary check | 4 |
| 1.5 | Type for electrical cables | |
| 1.6 | Connections | |
| 2 | Installation of the control board | 5 |
| 2.1 | Scheme of the control unit | 6 |
| 2.2 | Connection of the voltage | 7 |
| 2.3 | Connection of the MOTOR | |
| 2.4 | Connection of the SIGNAL LIGHT | |
| 2.5 | Connection of the MECHANICAL BRAKING | 8 |
| 2.6 | Connection of the LS | |
| 2.7 | Connection of the PHOTO 24 Vac | |
| 2.8 | Connection of the PHOTO with TEST 24 Vac | |
| 2.9 | Connection STOP and SAFETY EDGE control | 9 |
| 2.10 | Connection of ACTIVATING CONTROL | |
| 2.11 | Connection of a LIGHT | |
| 3 | MODE and ADJUSTMENTS | 10 |
| 3.1 | Set Up of the DIP SWITCHES | |
| 3.2 | INTERLOCK FUNCTION with DIP SWITCHES | |
| 3.3 | Logic of DIP | 11 |
| 4 | INSTALLATION of the RADIO and MANAGING of the remote control | 12 |
| 4.1 | Installation of the RADIO MODULE | |
| 4.2 | DELETE of the MEMORY | |
| 4.3 | MEMORIZATION of the REMOTE CONTROL | |
| 5 | SWITCHING ON and PROGRAMMING | 13 |
| 5.1 | Learning Working time | |
| 5.2 | Working time memorisation (partial opening) | |
| 5.3 | Memorization of the working time with START | 14 |
| 5.4 | Deactivation PHOTOCCELL when closing | |
| 5.5 | Increasing the PAUSE TIME | 15 |
| 5.6 | Adjustment of the obstacle detection | |
| 6 | Note | 16 |
| 7 | CE Conformity Declaration | |

1 Introduction

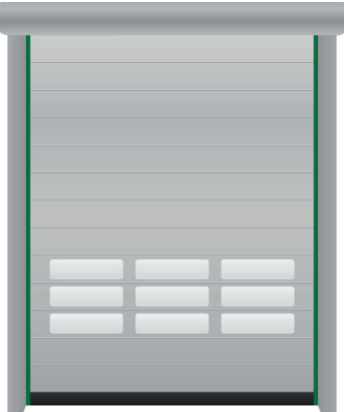
1.1 Safety precautions

We remind that the installations of gates and automatic doors must be executed from qualified personnels according to the norms. Before installing check the strength and mechanic part of the gate or door, check that the mechanical stops are suitable to stop immediately the cycle of the gate or door even in case of faulty limit switches or during the manual cycle. For your security we recommend to install a STOP switch when activated it stops immediately the gate. The switch has a N.C. opening in case is activated (as shown in par. no. 2.9)

1.2 Symbols and warning

| | | | |
|--|---|---|--|
|  | <p><u>Dangerous</u></p> <p>This is a warning and if it is not respect it can provoque material damage</p> |  | <p><u>Damage</u></p> <p>For safety reasons, protect your face during the connection</p> |
|  | <p><u>Device under tension</u></p> <p>The installation should be done only from qualified installer</p> |  | <p><u>Read carefully the operating manual</u></p> <p>Read carefully this manual before installation and keep it for the future</p> |

1.3 Type of installation



Installation in a folding door

The control board START-S9PV can be used for Industrial rapid doors with threephase motors (delta connection) up to 2 hp with ventilation systems.

1.4 Preliminary check

Making the correct choice of installation is essential to ensuring adequate safety and good protection against atmospheric agents. Remember that the control unit contains powered parts and electronic components which by their very nature are sensitive to infiltrations and moisture. The control unit is supplied in a container which guarantees an IP55 protection rating if adequately installed. Install the control unit on a permanent surface that is perfectly flat, adequately protected against impacts and at least 40 cm off the ground. The cables must enter the control unit from the bottom only; we recommend using wire leads and water-tight connections. When using tubing that could fill up with water or if the tubing comes from an underground well, the wires must enter a first shunting box placed at the same height as the control unit and then, from there, the wires must be passed into the container holding the control unit, again entering from the bottom. This prevents any evaporation of the water in the tubing from forming condensation inside the control unit itself.

1.5 Type for electrical cables

Depending on the installation, the type and number of devices installed, the number of cables needed can vary. The table below shows the cables needed for a typical installation. The cables used in the installation must be IEC 60335 compliant

| | | |
|---|--|-------------------------------------|
| ⇒ | Line for the power supply | Cable 3x1,5 mm ² |
| ⇒ | Cable for the motor (if not available) | Cable 4x1,5 mm ² minimum |
| ⇒ | Signal light | Cable 2x1,5 mm ² |
| ⇒ | Antenna | Shielded Cable RG58 |
| ⇒ | Key Selector | Cable 3x0,5 o 0,75 mm ² |
| ⇒ | Tx Photocell | Cable 4x0,5 o 0,75 mm ² |
| ⇒ | Rx Photocell | Cable 3x0,5 o 0,75 mm ² |







































1.6 Connections

To guarantee operator safety and to prevent damaging the components, never make connections or insert wireless receiver boards while the control unit is powered.

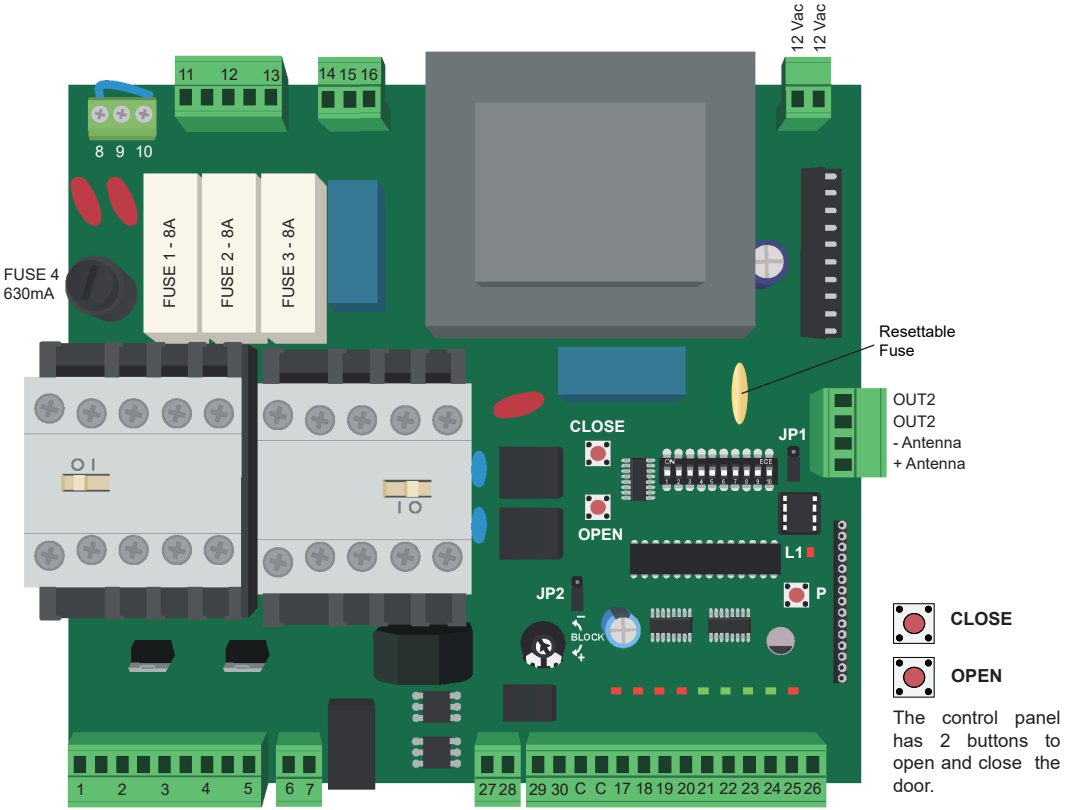
- Power the control unit through a 3 x 1.5 mm² cable. If the distance between the control unit and the ground system connection is more than 30 m, a ground plate must be installed in proximity to the control unit.
- If the motors do not have a cable, use the 4 x 1.5 mm² cable (open + close + common + ground).
- In connecting the part with an extremely low safety voltage, use cables with a minimum section of 0.5 or 0.75 mm².
- Use shielded cables if the length exceeds 30m and connecting the ground braid only from the side of the control unit.
- Do not connect the cables in underground cases even if they are water-tight.
- If they are not used, the inputs to the Normally Closed (NC) contacts must be jumpered to the common.
- If the same input has more than one contact (NC), they are placed in series.
- If they are not used, the inputs to the Normally Open (NO) contacts are left loose.
- If the same input has more than one contact (NO), they are to be placed in series.
- The contacts must be mechanical and free of any potential

Remember that systems for automatic gates and doors must be installed by highly qualified technicians only and in full compliance with current law.

2 Installation of the control board

| | | | |
|-------------------------------|-----|---|---|
| U | 1 |  | 400Vac Three Phase motor or 230Vac Single-phase |
| V | 2 |  | 400Vac Three Phase motor or 230Vac Single-phase |
| W | 3 |  | 400Vac Three Phase motor or 230Vac Single-phase |
| T | 4 |  | Connection of the ground |
| T | 5 |  | Connection of the ground |
| Light | 6 |  | dry-contact for light |
| | 7 |  | |
| Selection of the power supply | 8 |  | Make a link: |
| | 9 |  | 8-10 for 400Vac power supply |
| | 10 |  | 9-10 for 230Vac power supply |
| R | 11 |  | Electrical power supply 230/400Vac |
| S | 12 |  | Electrical power supply 230/400Vac |
| T | 13 |  | Electrical power supply 230/400Vac |
| NC | 14 |  | Outside brake |
| NO | 15 |  | Outside brake |
| COM | 16 |  | Outside brake |
| 12 Vac | 12V |  | Power supply for accessories 12Vac Max 250mA |
| | 12V |  | |
| Test | 27 |  | dry-contact for photocell TEST |
| | 28 |  | |
| OUT2 | |  | Output for Dry contact for 2nd Ch |
| OUT2 | |  | Output for Dry contact for 2nd Ch |
| GND | |  | - Antenna (Cable sock) |
| + ANT | |  | + Antenna |
| 24 Vac | 29 |  | Power supply for accessories 24Vac Max 500mA |
| 24 Vac | 30 |  | |
| Commun | COM |  | Common for all inputs: services, safety devices |
| Commun | COM |  | Common for all inputs: services, safety devices |
| FCO | 17 |  | Input for opening limit switch |
| FCF | 18 |  | Input for closing limit switch |
| STOP | 19 |  | STOP input |
| PHOTO | 20 |  | Input for photocell (PHOTO safety trips intervention only when closing) |
| OPEN | 21 |  | OPEN Input |
| CLOSE | 22 |  | CLOSE Input |
| START | 23 |  | Input for step-by-step START |
| PEDESTRIAN | 24 |  | Input for step-by-step control for partial opening |
| NC safety edge | 25 |  | NC safety edge |
| 8k2 safety edge | 26 |  | 8k2 safety edge |

2.1 Scheme of the control unit



CHECKING CONNECTIONS

The INFO LED indicate the correct logic of the micro-processor. It should flash each second and it means that the micro-processor is activated. When the control panel is powered, the led on the outputs, are lit on when there is a close contact to the common contact.

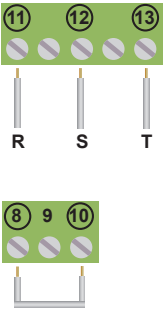
Red Led in the inputs **FCA(LSO)-FCC(LSC)-STOP-FOTO-COSTA(Saf. Edge NC)**, are lit on,
 Green led in the inputs **OPEN-CLOSE-START-PEDONALE (partial opening)** are switched off.



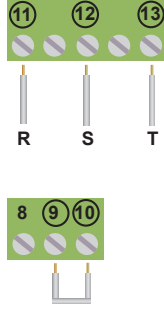
2.2 Connection of the voltage

There are three possibilities to power the control unit:

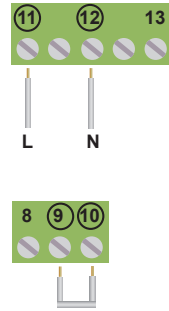
THREE-PHASE 400 Vac



THREE-PHASE 230 Vac



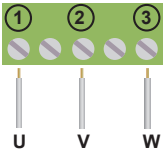
SINGLE-PHASE 230 Vac



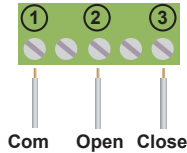
The voltage line must be protected from a thermal-cutoff-switch or from a 5A fuse. A circuit-breaker is recommended but not necessary if not available in the installation.

2.3 Connection of the MOTOR

Three-phase motor



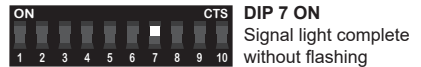
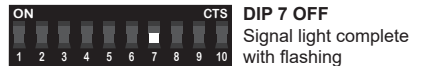
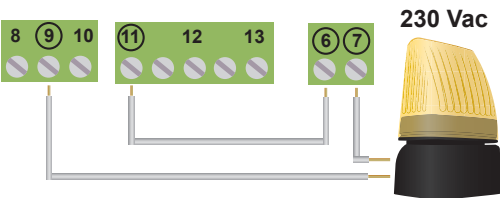
SINGLE-PHASE motor 230 Vac



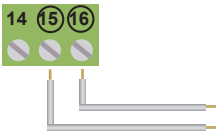
To be sure that the door opens, interrupt the photocells: if the gate starts closing the connection is incorrect and you need to reverse the wires OPEN and CLOSE of the motor. Pay attention not to reverse the poles OPEN and CLOSE

2.4 Connection of the SIGNAL LIGHT

Here is the connection for a 230V signal light with or without flashing:

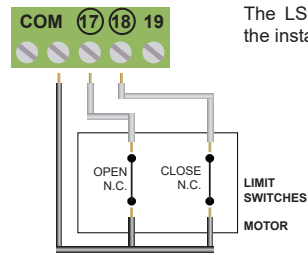


2.5 Connection of the MECHANICAL BRAKING



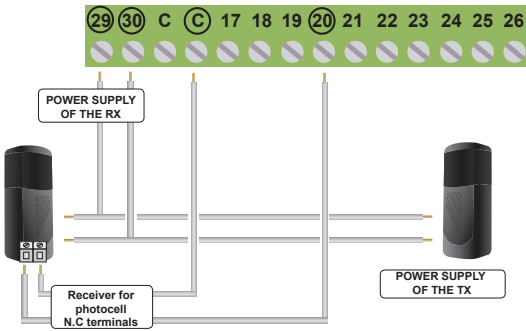
Here is the connection of the mechanical braking at 230V

2.6 Connection of the LS



The LS must be used in the installation

2.7 Connection of the PHOTO-BEAMS without TEST 24 Vac



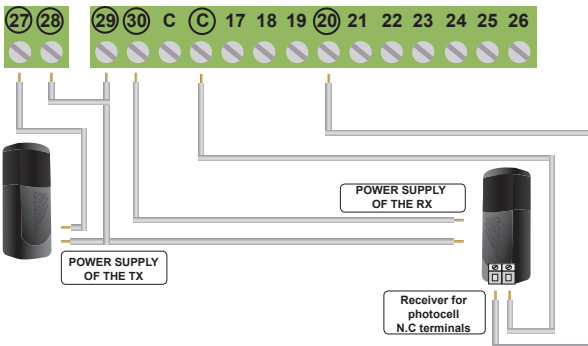
The photocell receiver contact must be:

- **dry contact** (isolated from voltages)
- **N.C.** (normally closed).

If you use more photocells, they must be connected in series

! If the input PHOTO is not used, make a link between terminals 20 and COM

2.8 Connection of the PHOTO-BEAMS with TEST 24 Vac



To activate the PHOTO TEST put DIP6 in ON as shown in the picture



The photocell receiver contact must be:

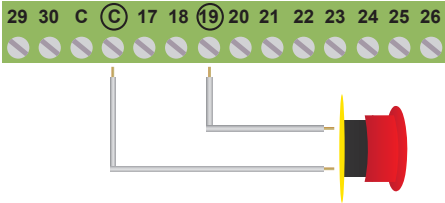
- **dry contact** (isolated from voltages)
- **N.C.** (normally closed).

If you use more photocells, they must be connected in series

The TEST of the photocells is assured if the photocells are working properly. The control panel make a test before each cycle.

In case the photocells are not working, the signal light will be switched on for 5 seconds.

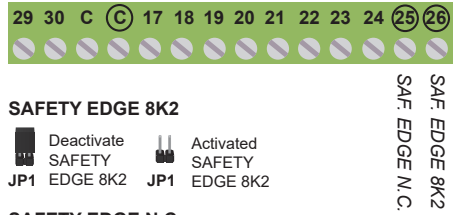
2.9 Connection STOP and SAFETY EDGE




Connection of the STOP control
Button: stop and deactivate until a new command.
Switch: keep the door blocked until a new command.

! If the input STOP is not used, make a link between COM-19.

Connection of the SAFETY EDGE:
 Stop the gate and reverse the door for 1,5 seconds

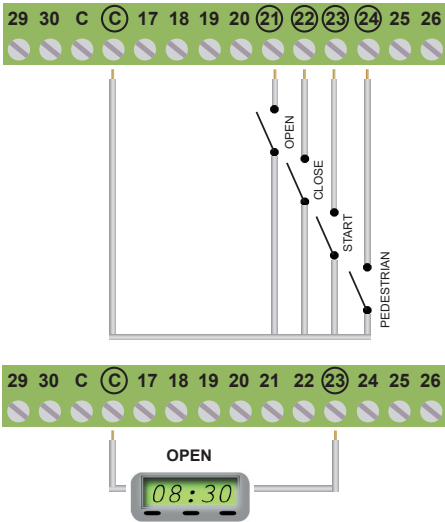


SAFETY EDGE 8K2
 Deactivate SAFETY EDGE 8K2  Activated SAFETY EDGE 8K2

SAFETY EDGE N.C.
 For NC Safety edge contact make a link between COM-25.

If the connection of the safety devices prevue the installation of a button or a NC contact. More security devices must be connected in parallel.

2.10 CONNECTION of ACTIVATING CONTROL



The connection of the ACTIVATING control can be done from any button or NO (normally open) contact. device. For more devices connect them in parallel.

Par. 3.1 describes the logic of the control panel.

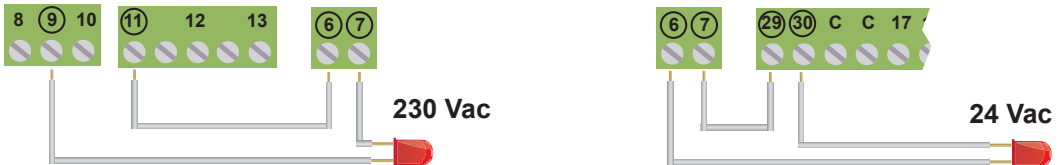
Term. board 21 OPEN
 22 CLOSE
 23 START
 24 PEDESTRIAN (partial opening)

Using terminals COM and 23 is possible to connect a clock to programm the opening and the closing time of the door. The contact is NO (normally open) and must be close when the door is open.

If the opening is available on terminal 23, connect it in parallel.

2.11 CONNECTION of a LIGHT






If you prevue to use the phototest, or a signal light don't use this connection:



3 MODE and ADJUSTMENTS

The control panel dispose of micro-switches to activate different functions according to the end-use requirements and for a safety doors.

3.1 Set Up of the DIP SWITCHES

| | | |
|--|-------------|--|
|  | 1-OFF 2-OFF | Each control the motor reverses: if in pause, it re-closes |
|  | 1-ON 2-OFF | When the door is opening it ignores the controls; when the door is closing reverses and re-opens in pause recharges the pause time |
|  | 1-OFF 2-ON | Either closing nor opening, the motor stop and reverse to the next control, IT DOESN'T RECLOSE AUTOMATICALLY |
|  | 1-ON 2-ON | Either opening nor in closing, motors stop and reverse to the next control IT RECLOSES AUTOMATICALLY |
|  | 3-ON | Deactivation OPENING Deactivate the opening if the photo-beam is obscured when the door is closed |

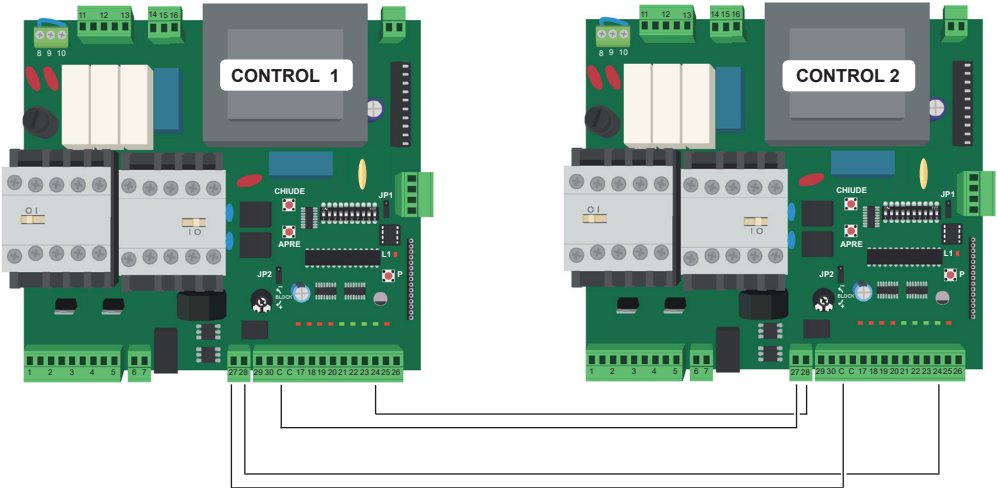
3.2 INTERLOCK FUNCTION with DIP SWITCHES

| Control 1 | | Control 2 | |
|------------|-----|-----------|---------------|
| test | 27 | - | COM common |
| test | 28 | - | 24 pedestrian |
| common | COM | - | 27 test |
| pedestrian | 24 | - | 28 test |

The DIP 4 can activate the INTERLOCKING



DIP 4 ON
activate the interlocking



3.3 Logic of DIP



5-ON

WORKING TIME

Activate the working time with START AND PEDESTRIAN (partial opening)



5-OFF

Reset of the memory

Bring in OFF the micro-switch no. 5 for reset the memory (for remote controls).



6-ON

Phototest

Activate the FOTOTEST for the photocells.



7-ON

Signal light with no flashing

It activate the flashing mode in case is not available in the control card. 230V output for signal light



7-OFF

Signal light with flashing

It activate the flashing on the signal light in case it is already available.



8-ON

Intervention for reversing

The intervention is 2 seconds before each reverse.

9-ON
10-ON**Partial opening via radio**

Thanks to the radio decode (10 poles molex connectors) activate a PARTIAL OPENING If you use this set up the terminals OUT2 must be free.

4 INSTALLATION of the RADIO and MANAGING of the remote control

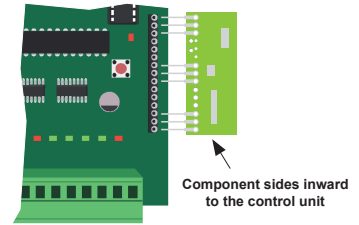
The control panel has a radio decode to memorize the remote controls. The control units can manage different codes but the first code determines the type of code which will be managed. You cannot memorize different codes which is not compatible with the first memorized remote.

4.1 Installation of the MODULE RADIO

! WARNING! The installation must be done when the control panel is not powered.

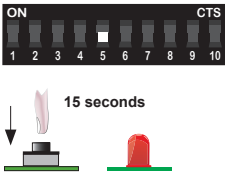
! WARNING! The module must be plugged in correctly. The component sides is inward of the electronic card

! WARNING! If the module will be take out, (some codes are in) you must reset the memory codes. (See next chapter CODES, DELETE of the MEMORY



4.2 DELETE of the MEMORY

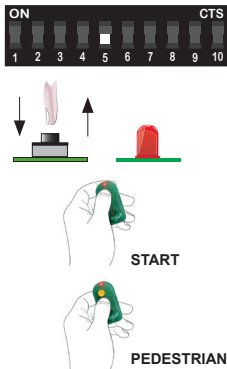
This operation delete all codes. You cannot delete one single code. It is necessary to reset the memory before learning the first remote control in a way other codes are not available in the memory. You can delete the code when the door is closed.



| | |
|---|--|
| 1 | Make sure DIPA5 is in OFF. The door is closed |
| 2 | Keep pressed button P in the control card until led TEST starts flashing |
| 3 | Wait until led TEST flashes regularly |

4.3 MEMORIZATION of the REMOTE CONTROL

The memorization of the remote control is possible when the door is closed and make the following:



| | |
|---|---|
| 1 | Make sure DIP A 5 is OFF position. The door is closed |
| 2 | Press and release button P in the card . LED TEST from flashing get to fix waiting a command for 10 seconds . |
| 3 | Press and release slowly the button of the remote control associated to the START Command |
| 4 | ...in 10 seconds press and release the button of the remote control to be associated to the PEDESTRIAN (Partial opening) normally the 2nd button of the remote control. The LED TEST flashes fast for 6 seconds and then flashes regularly. |

- If you wish a new remote control repeat the operation from 1st step.
- If you don't need need any button associated to the Partial Opening, don't do the step no.4 and don't push any button for 8 seconds and 1 flash of the led TEST, then wait until the regular flashing of the led (output for the memorization of the code) .
- If you press the button of the remote control , led TEST is lit on, it means that the remote control is not compatible .
- If you press the button of the remote control led TEST flashes slowly it means that the memory is full.
- You cannot cancel one single code.

5 SWITCHING ON and PROGRAMMING

When you turn on the control panel, if everything is set properly, the green LED TEST must flash while the LED for inputs STOP, FOTO, LSO, LSC and Safety Edge must be lit one (if the gate is closed LSC is switched off). LED START and Partial Opening must be switched off. After the turning on, the motor opens it means that the control panel has been switched off suddenly. (cut off power supply) while the door was open.



**If you need to program the working time:
turn off the control panel, close the door,
put in ON DIPA 5 and give power supply again**

Put in ON DIP 5, and the control card is in working time mode .
This is possible to set up the working time and pause time of the motor

5.1 Learning Working time

Here is the procedure of the working learning time .

It is necessary to use the control START and PEDESTRIAN (partial opening)

These controls connected to the terminals 16-23 to open the START or 16-24 for partial opening (see "CONNECTION OF THE OPENING " and "CONNECTION OF THE PARTIAL OPENING) OR from a memorized remote control (see "MEMORIZATION OF THE REMOTE CONTROL")



This operation is possible when the door is closed.

Starting from the beginning of the control unit :

put in ON the micro switch 5 of DIP A before powering the control unit.

5.2 WORKING TIME MEMORISATION with PARTIAL OPENING

The PARTIAL OPENING can partially open for the passage of the people to avoid the complete open of the door:



PEDESTRIAN

| | | |
|---|--|-------------------------|
| 1 | Put in ON the micro switch 5 of DIP A | The door is closed |
| 2 | Press the button PARTIAL OPENING (all which is connected in the input no.24 or 2nd channel of the remote control) | The door is opening |
| 3 | Press the button PARTIAL OPENING to stop the door (end of the partial opening) | The door stops |
| 4 | Let the time goes until the door must be open | The door is in pause |
| 5 | Press the PARTIAL OPENING to start CLOSING | The door starts CLOSING |
| 6 | Wait the door is closing automatically | Door Closed |
| 7 | Bring in OFF the micro-switch 5 of DIP A for the standard mode. The signal light turns off and the green led are in standard mode. | Programming finished |

5.3 Memorization of the working time with START (opening control)

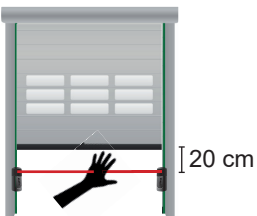
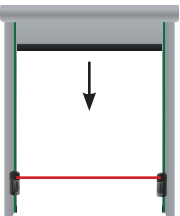


| | | |
|---|---|------------------------|
| 1 | Bring ON the microswitch 5 of DIP A | Door is closed |
| 2 | Press START (or everything connected to the input no.23 or the 1st channel of the remote control) | Door is opening |
| 3 | Wait the door stops | Door stops |
| 4 | Count the opening time | Door is in pause |
| 5 | Press START for closing | Door is closing |
| 6 | To deactivate the photocell, follow Par 5.4 otherwise follow the next point. (7) | Photobeam deactivated |
| 7 | Wait the door stops automatically | Door is closed |
| 8 | Bring in OFF the micro switch 5 of DIP A for the standard mode. The signal light turns off and the green led are in the standard mode | Programming terminated |



5.4 Deactivation PHOTOCELL when closing

It can happen that the curtain obscures the ray of the photocell. To avoid this inconvenience you need to programm the WORKING TIME with the START CONTROL as follow.

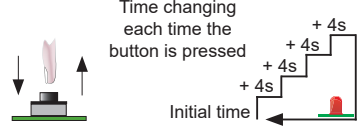


| | |
|---|---|
| A | If you programmed the control panel until point no.5 correctly (Working time memorization with START control) the door is closing now. |
| B | To inhibit the photocell, when the door is closing during the memorization of the working time, interrupt the ray of the photo-beams with a hand, 20 cm before the curtain reach the photocell. |
| C | Now the inhibition point has been memorized. Go back to point no.7 of the previous paragraph and follow the instructions for the working time. |

5.5 Increasing the PAUSE TIME

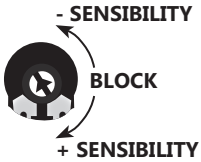
It is possible to increase the pause time without repeating the memorization of the working time.

When the door is in pause, each presson of button P, the pause time increases of 4 seconds. There are 5 steps to increase the pause time until 20 seconds. (5 pressions at 4 sec. each). At the 6th presson the pause time is at 2 seconds (LED START and PEDRESTRIAN PARTIAL OPENING are lighting).



! This operation is possible when the door is open but in pause time

5.6 Adjustment of the obstacle detection



The control panel has an electronic control for the consumption of the motor. In case of an obstacle, the electronic block will stop the motor. It is possible to adjust the sensitivity of the obstacle detection with the trimmer in the control panel. Turning in the clockwise you increase the sensitivity (the motor stops easily) Turning in the counterclockwise you reduce the sensitivity.

WARNING: the control is not activated for the first 2 seconds because the inertia phenomena.

For a correct set up of the sensivity you need to adjust first a very low sensivity. If you set up a higher sensivity the control panel can stop the motor even if the door is not slowing down. (low temperature or small frictions in the mechanic).

There is a Jumper JP2 in the control unit available which can deactivate the obstacle detection, set up the jumper as follow:

