Manual LINO-MB

1	Power phase 230 VAC/50Hz	**22**	Safety ribbon 1 N.C. contact
2	Neutral 230 VAC/50Hz	**23**	Motor 1 open limit switch N.C. contact
3	Motor 1 closing	**24**	Motor 1 close limit switch N.C. contact
4	Motor 1 common	**25**	Safety ribbon 2 N.C. contact
5	Motor 1 opening	**26**	Motor 2 open limit switch N.C. contact
6	Motor 2 closing	**27**	Motor 2 close limit switch N.C. contact
7	Motor 2 common	**28**	Common (-)
8	Motor 2 opening	**F1**	5A 230VAC FUSE
9-10	Flashing light 230VAC 40W	**ON/OFF**	It shows that the control unit is power on
11-12	Electric lock 12V	**OVERLOAD**	It shows that there is an overload on accessories power supply
13	Common (-)	**LED**	It shows that control unit learn function
14	Photocell/Edge TX power supply for functional test	**LS.OP**	It shows that open limit switch activation
15	Power output 24VDC for photocell and other accessories	**LS.CL**	It shows that close limit switch activation
16	PEDESTRIAN START command N.O. contact	**OP**	Opening in process
17	START command N.O. contact	**PA**	Pause (gate opened)
18	STOP command N.C. contact	**CL**	Closing in process
19	Photocell 1 N.C. contact		
20	Photocell 2 N.C. contact		
21	Common (-)		

Note: Terminals 23 and 24 belong to **Motor 1 Encoder**; terminals 26 and 27 belong to **Motor 2 Encoder**.
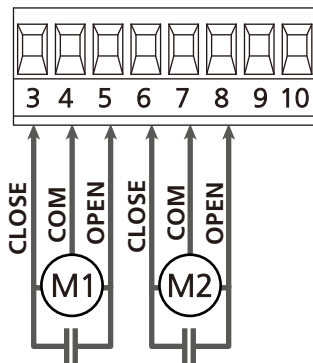
MOTORS

The control unit can control one or two alternate current asynchronous motors.

During the opening phase, motor **M1** is started first, motor **M2** starts after the time set for the parameter **[r.AP]** (opening delay). During the closing phase, motor **M2** is started first, motor **M1** starts after the time set for the parameter **[r.Ch]** (closing delay).

The time set for the parameters **[r.AP]** and **[r.Ch]** are used to avoid the doors colliding. If necessary, change the default values by accessing the programming menu:

NOTE: If the control unit needs to control one motor only, the cables must be connected to terminals of motor **M1**.

1. Connect motor **M1** cables as follows:
   - opening cable to terminal **5**
   - closing cable to terminal **3**
   - common return cable to terminal **4**
2. Connect motor M2 cables as follows:
   - opening cable to terminal **8**
   - closing cable to terminal **6**
   - common return cable to terminal **7**

WARNING:
- In case it is ready to install, a start capacitor for each motor is require; connect the start capacitor for motor **M1** between terminals **3** and **5** and start capacitor for motor **M2** (if necessary) between terminals **6** and **8**.
- In case motor **M2** is not connected, set menu **[t.AP2]** to **[0.0"]**.

CONTROL OF THE CORRECT PROCESS OF CLOSING LEAVES
If the control unit detect a wrong overlap action (leaf 1 reach the complete closed position before leaf 2). the gate is opened a slight distance so that it can close correctly.
If the leaves do not overlap (e.g. in double swing gate), set to zero the opening door delay parameter in order to disable the control of the right closing process.

HYDRAULIC MOTORS
If hydraulic motors are used, it is necessary that some unit programming parameters are set as follows:
- Motor power set 100%

  Pot1 = 100

  Pot2 = 100
- Slow down are disabled (they are already disabled by default)

  r.AAP = no

  r.ACh = no
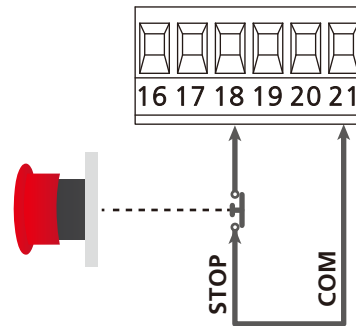- Obstacles sensor disabled

  SEnS = no

STOP

For more safety, you can install a STOP switch, when pressed , immediately stops the automation.
The switch must have normal closed contact, when contact open it will active.

Connect the cables of the STOP switch between terminals **18 (STOP)** and **21 (COM)** of the control unit.
▸ To active the function, change the setting **[StoP]**

NOTE: in case the stop switch is operated while the gate is open, the automatic closing function will always be disabled. To close the gate again, you will need a **START** command (if the start function in pause is disabled, it will be temporarily enabled to allow the gate release).

The stop switch function also can be active by press remote control **channel 3** which already stored on the control unit.

ACTIVATION INPUTS

The control unit have two activation input (**START** and **P.START**), which operation depends on the programmed operation modes **[Strt]**.

Standard mode [StAn]
START = START (it controls the total opening of the gate)
P.START = PEDESTRIAN START (it controls the partial opening of the gate)

Open/Close command [APCh]
START = OPENING (it controls the opening of the gate)
P.START = CLOSING (it controls the closing of the gate)

Dead man operation [PrES]
START = OPENING (it controls the opening of the gate)
P.START = CLOSING (it controls the closing of the gate)

Timer mode [oroL]
The function allows programming the gate opening time during the day; it control by connect with an external timer.

START = START (it controls the total opening of the gate)
P.START = PEDESTRIAN START (it controls the partial opening of the gate)

The gate keep opening when the contact of the **START** or **P.START** keep closed; as soon as the contact release opened, the pause time count down will start, after pause time is finished, the gate will be closed again.

CAUTION: Automatic closing must be enable. (parameter **[Ch.AU]**)

NOTE: in all modes, input must be connected to devices having normal open contacts.

Connect cables for the first control device input between terminals **17 (START)** and **21 (COM)** of the control unit. Connect cables for the second control device input between terminals **16 (P.START)** and **21 (COM)** of the control unit.
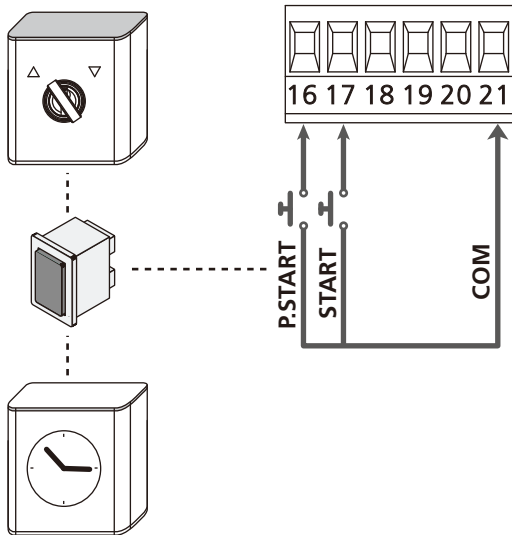
The **START** function can also be active by pressing **UP** key in the control unit or by press remote control **channel 1** which already stored on the control unit.

The **P.START** function can also be active by press **DOWN** key in the control unit or by press remote control **channel 2** which already stored on the control unit.

PHOTOCELLS

The control unit can use with two kinds of photocells, depend on the terminal to which they are connected:

Photocell 1
Photocells installed on the gate inner side, which are active during the opening and the closing phase.
When photocell 1 interrupted, the control unit stops the gate; as soon as the photocell signal received, the control unit will open the gate completely.

WARNING: Photocell 1 must be installed so that it completely protect the gates working area.

Photocell 2
Photocells installed on the gate outer side, which are active during the closing phase only.
When photocell 2 interrupted, the control unit opens the gate immediately, without waiting photocell signal received.

The control unit supply a 24VDC power supply to photocells and it can perform a photocell test operation before starting the gate in opening phase.

NOTE: Photocell power terminals are protected by an electronics fuse that stops current in case of overload.

WARNING: The sensor cables must not be installed with the same conduit of the motor cables.

- Connect power supply cables of photocell transmitter between terminals **15** and **13** of the control unit.
- Connect power supply cables of photocell receiver between terminals **14** and **13** of the control unit.
- Connect the N.C. terminals of the photocell receivers of the **PHOTOCELL 1** between terminals **19** and **21**.
  ▸ To active the function, change the setting **[Fot1]**.
- Connect the N.C. terminals of the photocell receivers of the **PHOTOCELL 2** between terminals **20** and **21**.
  ▸ Function is active on closing phase or gate is closed. To active the function, change the setting **[Fot2]**.
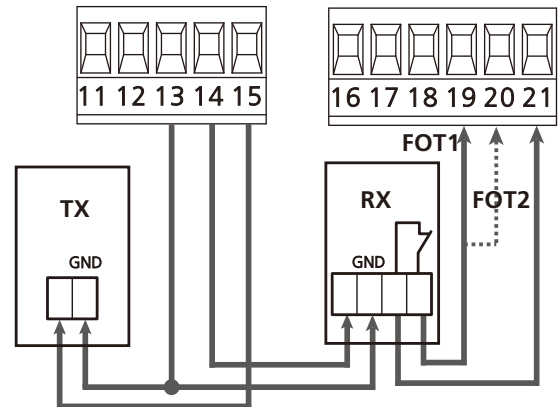
WARNING:
- If several couples of same kind photocells are mounted, their outputs must be connected in series.
- In case of reflection photocells, power supply must be connected to terminals **15** and **13** of the control unit to carry out the operation test.

SAFETY EDGES

The control unit can use with two kinds of safety edges, depend on the terminal to which they are connected.

Safety Edge 1 (fixed)
They are mounted on walls or on other fixed obstacles that are approached by the gate doors allow working area.
When **safety edge 1** operate during the gate opening phase, the control unit will close the doors for 3 seconds then standstill;
When **safety edge 1** operate during the gate closing phase, the control unit will standstill immediately.
The direction of the gate at next command of **START** or **PEDESTRIAN START** depends on the **[Stop]** setting (it reverse or continues of the last movement).
If the input **STOP** is disabled, the command makes the motion continue in the same direction. If the **STOP** input is disabled, the control unit restarts motion in the same direction it was traveled prior to the intervention of the edge.

Safety Edge 2 (mobile)
They are mounted to the door ends.
When **safety edge 2** operate during the gate opening phase, the control unit will standstill immediately; when **safety edge 2** operate during the gate closing phase, the control unit will open the doors for 3 seconds, then it will standstill.
The direction of the gate at next command of **START** or **PEDESTRIAN START** is depends upon the parameter **[Stop]** (it reverse or continue the motion). If the input **STOP** is disabled, the command makes the motion continue in the same direction. If the **STOP** input is disabled, the control unit restarts motion in the same direction it was traveled prior to the intervention of the edge.

Both the input can manage the classic safety edge with N.C. contact and the conductive rubber safety edge with 8.2Kohm normal resistance.
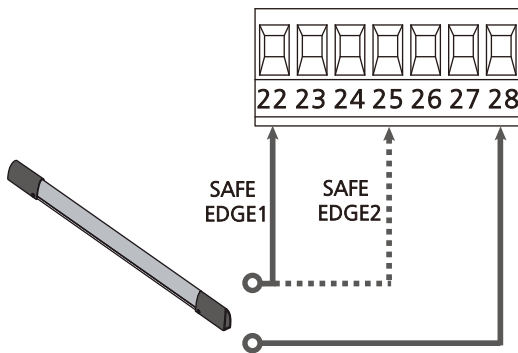
Change the setting **[CoS1]** and **[CoS2]** depend on the type of installed side of cables.

Contact **safety edge 1** cables between terminals **22** and **28**.
▶ To activate the function, change the setting **[CoS1]**

Contact **safety edge 2** cables between terminals **25** and **28**.
▶ To activate the function, change the setting **[CoS2]**.

In order to meet the requirements of the EN12978 rules, it is necessary to install safety edges controlled by a control unit continues checking the proper working. If using control unit suited to the test by power outage, connect the power supply cables of the control unit between terminal **15** and **13** of the control unit.
Otherwise, connect them between terminal **14** and **13**.

WARNING:
• Make use of safety edges have outputs with normal close contact.
• Outputs same kind safety edge must be connect in series.

LIMIT SWITCHES

The control unit can control the gate run via limit switches.

The limit switches can used for indicated the limits of the run.
▶ To active the function, change the setting **[FC.En]**

Connect the limit switch to the control unit terminals as follow:
• Opening limit switch in door 1 between terminal **23** and **28**.
• Closing limit switch in door 1 between terminal **24** and **28**.
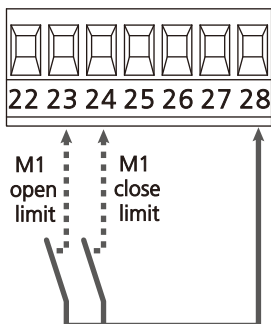
• Opening limit switch in door 2 between terminal **26** and **28**.
• Closing limit switch in door 2 between terminal **27** and **28**.
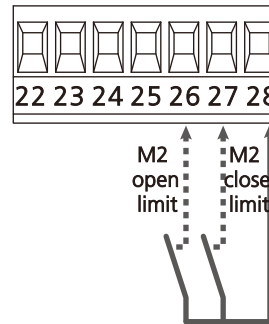
ENCODER

You can use encoder-equipped motors to control the precise position of the gates. Furthermore, the encoder allow you to detect if the gate panels jam in an improper position due to obstacles.

For correct operation of the encoders, it is essential that both gate leaves have a slight distance near a mechanical stop when in the closed position.
When the control unit power on, the first START command will closes the gate to realign the encoders (if automatic closing is active this operation occurs automatically).

ATTENTION: Limit switches terminals also can connect the encoders. Therefore, it is not necessary connect same terminals with limit switches and encoders.

WARNING: The sensor cables must not be installed with the same conduit of the motor cables.

WARNING: The encoders must be connected as indicated below. Improper connection of the black cable may damage the device.

CONNECTION OF TWO MOTORS WITH ENCODERS
• Connect the negative feeds (BLACK cable) for both encoders to terminal **28.**
• Connect the positive feeds (RED cable) for both encoders to terminal **11.**
• Connect the motor 1 encoder signal cables (BLUE/WHITE) to terminal **23** and **24.**
• Connect the motor 2 encoder signal cables (BLUE/WHITE) to terminal **26** and **27.**
▶ To activate the function, change the setting **[FC.En]**
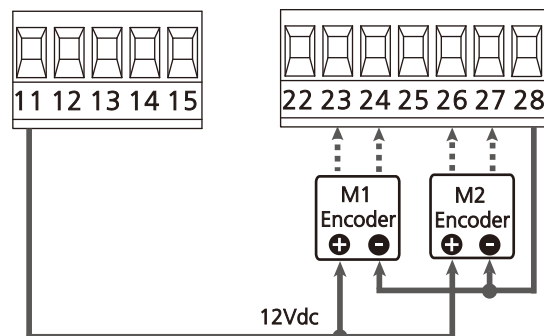
FLASHING LIGHT

Control unit provides output for 230V-40W flashing light equipped with intermittence inside.

Connect flashing light cables to terminal **9** and **10**.


230V - 40W
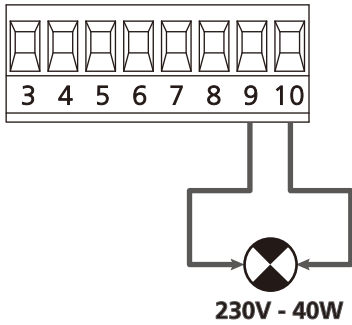
ELECTRIC LOCK

An electric lock can be installed on the gate, to ensure a good closing of doors. Make sure use 12V electric lock.

Connect electric lock cables to terminals **11** and **12**

▶ To modify the time of the electric lock action, check the follow parameters:
  - **[t.SEr]**   lock time
  - **[t.ASE]**   advanced lock time

If the electric lock has difficult to lock or release in the early stage, there are functions to facilitate these operations:
1. Backlash time: before starting opening phase, the motors are driven gate closing to facilitate the release of the lock.
  ▶ To active this function, setting the time through **[t.inu]**.
2. Fast closing time after slow down: Once completed the show down stage, the control unit order closing at normal speed (without slow down) to facilitate lock of the gate.
  ▶ To active this function, set the time through **[t.CuE]**.
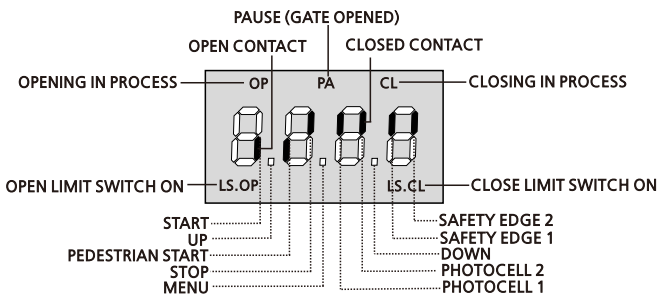

12V
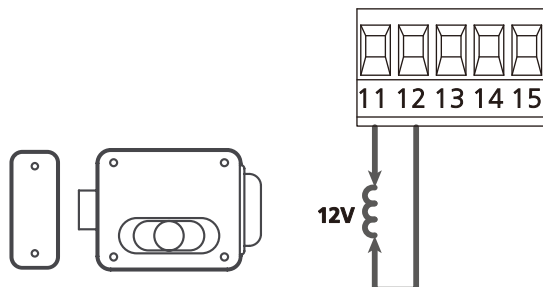
EXTERNAL ANTENNA

We suggest to use the external antenna in order to guarantee the maximum range.
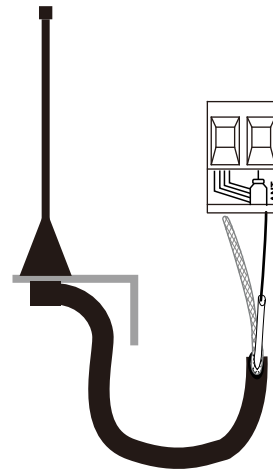
CONTROL PANEL

When power is on, the control unit checks that display correctly operates by switching on all segments for 1.5 sec. [8.8.8.8] . Firmware version , e.g. [Pr 1.3] , will be view in the following 1.5 sec. Panel will be viewed upon completion of this test.

The digits on the display represents the physical status of the terminal board contacts and of the program mode keys ; if the upper vertical segment is on , the contact is close ; if the lower vertical segment is on , the contact is open (the above picture shows an instance where the inputs **START**, **P.START**, **STOP, PHOTO1**, **PHOTO2, EDGE1** and **EDGE2** have all been correctly connected)

Points being among display digits show the status of programming push-buttons : when a push-button is pressed, the correspond point turns on.

The lowest on the display show the status of the limit switch . For only one gate, **[LS.OP]** turn on when the gate is completely open, **[LS.CL]** turn on when the gate is completely close.

For two gates, **[LS.OP]/[LS.CL]** turn on when both of the gates are completely closed or completely opened.; **[LS.OP]/[LS.CL]** will blink only one gate reach its open or close limit switch.

**The highest on the display** show the gate status:
- The **[OP]** turns on when the gate run in opening phase. If it blinks, it means that the opening phase has been caused by a safety device or obstacle detect.
- The **[PA]** shows that the gate is on pause. If it blinks, it means that the time countdown for the automatic closing has been activated
- The **[CL]** turn on when the gate is run in closing phase. If it blinks, it means that the closing phase has been caused by a safe device or obstacle detect.

REMOTE LEARN FUNCTION

When press **[LEARN]** switch brief , then press any transmitter button , the **[LED]** will blink 2 times , the control unit now learn the transmitter code , it can learn up to 200 transmitter codes.

When press and hold **[LEARN]** switch over 10 seconds , all the transmitter codes in control board will erase. The **[LED]** will blink 10 times.

When the transmitter button already learned into control unit , the **[LED]** will blink 5 times, the code will not learn into control board.
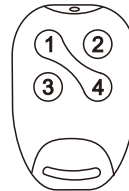

- CHANNEL 1   START
- CHANNEL 2   STOP
- CHANNEL 3   PEDESTRIAN START

TECHNICAL SPECIFICATIONS

Power supply	230V/50Hz
Max motor load	2 * 700W
Max accessories load 24V	10W
Working temperature	-20°C ~ +60°C
Protection fuse	F1 = 5A

USE OF UP MENU AND DOWN KEYS FOR PROGRAMMING

Control unit time and function programming is made within a special configuration menu, to which you can access and where you can shift through UP, MENU and DOWN keys under the LCD display.
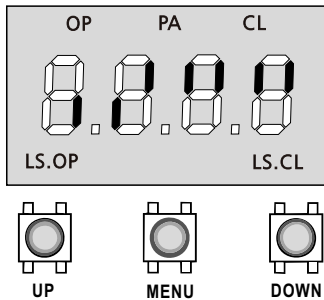
Hold down the MENU key until **[dEF]** appears on display, to activate the programming mode while the information show on LCD.

Configuration menu consists of a list of configurable items; the information appear on LCD will show the current selected item.

By press UP key, you will return to the previous item; by press DOWN key, you will skip to the next item.
By press MENU key, you can view the current value of selected item and modify its value.

The last item of the menu **[FinE]** allows to store the modify value and return to the normal status of the control unit. In order not lose the setting configuration , must exit the programming mode through this menu item.

WARNING: If no operations in programming mode for more than one minute, the control unit exits from the programming mode without saving the modify value and changes will be lose.

By holding down the UP key, configuration menu items will scroll fast until item **[dEF]** is show. Vice versa, by holding down the DOWN key, items will scroll fast forward until item **[FinE]** is show. In this way, you can quickly reach either the top or bottom of the list.

There are the following three kinds of menu items:
• Function menu
• Time menu
• Digital menu

Function menu setup

Function menus allow to select the available value to setup the function items. When you enter into a function item, the store value will be showed; you can scroll all available value through UP or DOWN key. By press the MENU key, you will keep the modify value to current function item and return to the configuration menu.

Time menu setup

Time menus allow setting function items with time parameter. When you enter into a time menu, the store value will be showed; the display mode depends on the current value:

• Time value lower than one minute will show as follow:

When you press UP key, current time value increase half a second; vice versa, when you press DOWN key, current time value decrease half a second.

• Time value between 1 to 10 minutes will show as follow:

When you press UP key, current time value increase 5 seconds; vice versa, when you press DOWN key, current time value decrease 5 seconds.

• Time value more than 10 minutes will show as follow:

When you press UP key, current time value increase half a minute; vice versa, when you press DOWN key, current time value decrease half a minute.

By holding the UP key, you can quickly increase the time value to reach the item maximum available value. Vice versa, by holding the DOWN key, you can quickly decrease the time value to reach **[0.0"]**.

In some situation, setting the value to **[0]** means that the correspond function is disable, in this case, **[no]** will show instead of **[0.0"]**.

By press MENU key, you will store the current display value and return to the configuration menu.

Digital menu setup

Digital menu are similar to time menu; however, the available value can be any number.
By holding the UP or DOWN key, the value will increase or decrease slowly.

QUICK CONFIGURATION

This paragraph concerns a quick procedure to set the control unit and set it at work immediately.
We recommend following these instructions, in order to check quickly the correct operation of control unit, motor and accessories, and then changing the configuration in case of any non-satisfactory parameter.

1. Load the default configuration.
   NOTE: The DEFAULT configuration includes photocell connect to the **[Fot2]** input.

WARNING: If you load the [Ante] DEFAULT and the installation only requires one door, Set the opening time [t.AP2] to [0.0"].

2. Set parameters **[Stop]**, **[Fot1]**, **[Fot2]**, **[CoS1]**, **[CoS2]** according to the safety devices installed on the gate.
3. Check the connection of the motors is correct:
   a. Feed the unit and active the automation with a **START** command: the motors must move in opening phase direction.
   b. If the direction of the movement is wrong, invert the opening/closing motor cables to adjust move in reverse.
   c. If the opening sequence of the doors is not correct, invert the connections of the two motors.
4. Start the self-learning cycle.
5. Check that the automation work properly and if necessary modify the configuration of the desired parameters.

LOADING OF DEFAULT PARAMETERS

If necessary, it is possible to restore all the parameters to their standard or default value (see table at the end)

WARNING: This procedure causes the loss of all the customized parameters.

1. Press and hold down the **MENU** key until the **[dEF.]** appears on the display
2. Release the **MENU** key, then press MENU key brief, the display will show **[no]** (press the **MENU** key only if you want to leave this menu)
3. - If the unit controls for one door, press the **UP** key: the display show **[SCor]**
   - If the unit controls other type of automation, press the **DOWN** key: the display show **[Ante]**
4. Press the **MENU** key: All of the parameters are returned to their default value and display shows **[t.AP1]**.
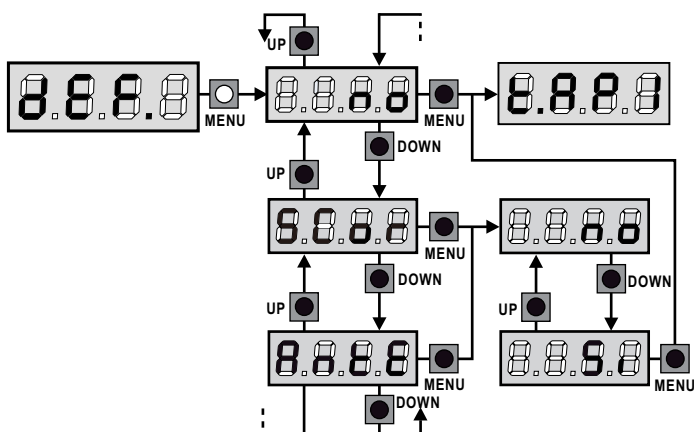

SELF-LEARNING OF WORKING TIME

This menu allow the automatic learning of time necessary to open and close phase of the gate. The encoder positions are also saved, if enabled.

ATTENTION: Before starting the procedure, it is necessary to check the following points:
 • Limit switches and encoder: if these devices installed, must be enabled through setting the **[FC.En]**.
 • STANDARD (DEFAULT) operation mode: the **[Strt]** must be setting **[StAn]**

WARNING: If the function **PHOTOCELL SHADOW ZONE** is active, the operation of the photocell during the self-learning does not open the gate; the control unit automatic sets the parameters of the shadow zone in order to disable the photocell when the gate passes in the position of its operation.

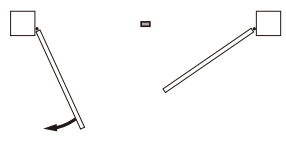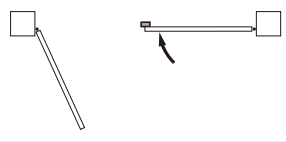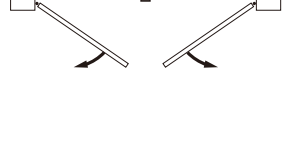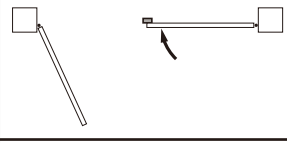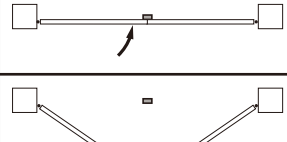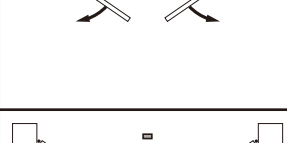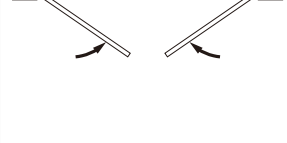Place the doors, or door, at half run position and proceed with the following points:
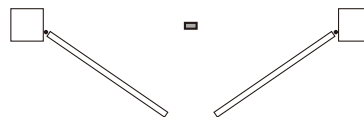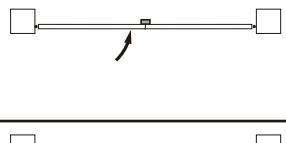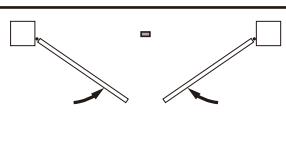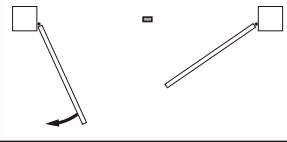
NOTE: If the gate has only one door, the opening time of motor 2 must be set at 0 (**[t.AP2] = 0.0"**)
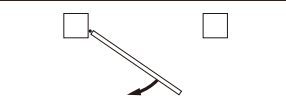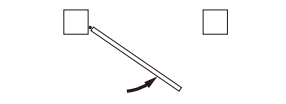
1. Press and hold down the **MENU** key until the **[dEF.]** appears on the display
2. Release the **MENU** key, press **UP** or **DOWN** key brief to select until **[APPr]** appears on the display
3. Press **MENU** key, the display will show **[no]** (press the **MENU** key only if you want to leave this menu)
4. Press **UP** key, **[Go]** will appears on the display.
5. Press **MENU** key to start the self-learning cycle for the work cycle times.

CAUTION: This procedure varies based on the number of gate panel and travel control devices installed (refer to the tables outlined on the following pages).
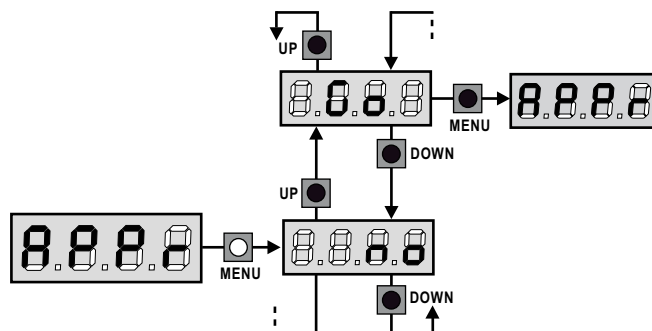
2 MOTORS (LIMIT SWITCHES OR SENSOR OF OBSTACLES IS ENABLED)

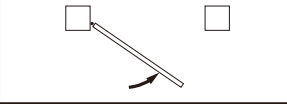|	
1. Door 1 is opened for a few seconds	
2. Door 2 is closed until the limit switches comes into action, or the sensor of obstacles detects that the door is locked	
3. Door 1 is closed until the limit switches comes into action, or the sensor of obstacles detects that the door is locked	
4. An opening movement for each door is carried out, the operation ends when the limit switches comes into action, or the sensor of obstacles detects that the door is locked	
5. A closing movement for each door is carried out, the operation ends when the limit switches comes into action, or the sensor of obstacles detects that the door is locked	
6. The detected parameters are stored and the unit is ready for use	

2 MOTORS (NO LIMIT SWITCHES AND SENSOR OF OBSTACLES IS DISABLED)

ATTENTION: In this case the limits of the run must be operated with a **START** command

1. Door 1 is opened for a few seconds	
2. Door 2 is closed until the unit receives a **START** command	
3. Door 1 is closed until the unit receives a **START** command	
4. An opening movement is carried out for each door, the operation ends when the unit receives a **START** command (the first **START** stops door 1, the second **START** stops door 2)	
5. A closing movement is carried out for each door, the operation ends when the unit receives a **START** command (the first **START** stops door 1, the second **START** stops door 2)	
6. The detected parameters are stored and the unit is ready for use	

1 MOTOR (LIMIT SWITCHES OR SENSOR OF OBSTACLES IS ENABLED)

1. The door is closed until the limit switches comes into action, or the sensor of obstacles detects that the door is locked	
2. An opening movement is carried out, the operation ends when the limit switches comes into action, or the sensor of obstacles detects that the door is locked	
3. A closing movement is carried out, the operation ends when the limit switches comes into action, or the sensors of obstacles detects that the door is locked	
4. The detected parameters are stored and the unit is ready for use	

1 MOTOR (NO LIMIT SWITCHES AND SENSOR OF OBSTACLES IS DISABLED)

ATTENTION: In this case the limits of the run must be operated with a **START** command

1. The door is closed until the unit receives a **START** command	
2. An opening movement is carried out, the operation ends when the unit receives a **START** command	
3. A closing movement is carried out, the operation ends when the unit receives a **START** command	
4. The detected parameters are stored and the unit is ready for use	

READING OF CYCLE COUNTER

The control unit counts the complete opening cycles of the gate and, if requested, it shows that service is required after a fixed number of cycles.

There are two counters available:
- A total counter for complete opening cycles that cannot be zeroed (option **[tot]** of item **[Cont]**)
- A downward counter for the number of cycles before the next request for service (option **[SEru]** of item **[Cont]**). This counter can be programmed according to the desired value.

The side scheme shows how to read the total counter, how to read the number of cycles before the next service is required as well as how to program the number of cycles before the next request of service (as for example show, the control unit completed 12451 cycles and there are 1300 cycles before the next service request.

Area 1 is the reading of the total number of completed cycles; through **UP** and **DOWN** keys, you can alternate the display of thousands or units.

Area 2 is the reading of the number of cycles before the next request for service: its value is rounded down to the hundreds.

Area 3 is the setup of this latter counter; if you press once **UP** or **DOWN** key, the current counter value will be rounded up or down to thousands, any following press will have the setup be increased or decreased of 1000 units. The previous display count will get lost.
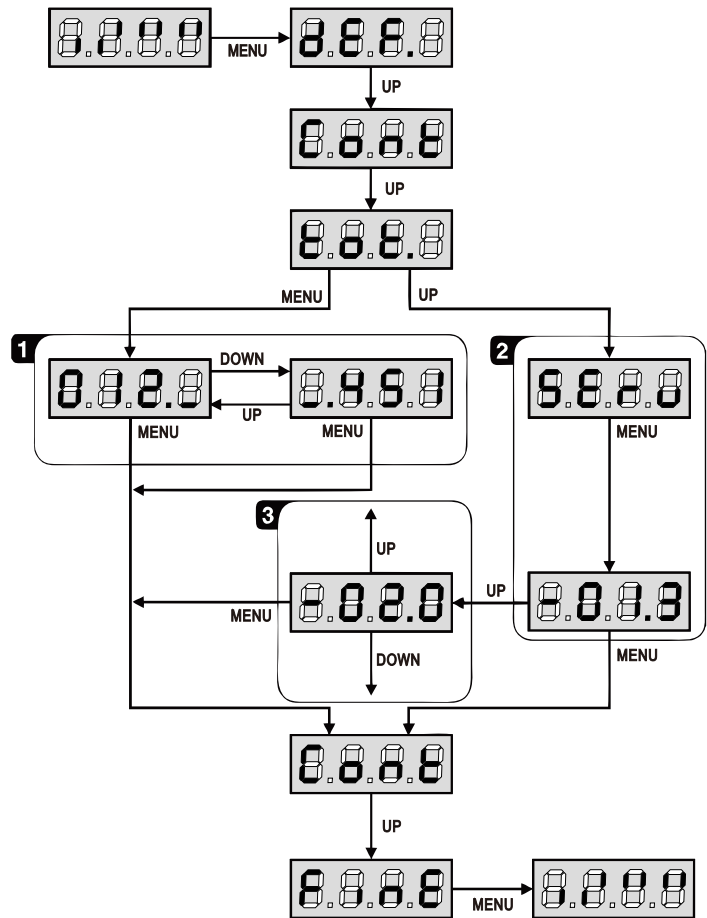
Signal of service required

As soon as the counter of cycles before the next request for service is zero, the control unit shows the request for service through an additional 5-seconds pre-blinking.

WARNING: service operation shall be carried out by qualified staff only. This signal will be repeated at each opening cycle, until the installer enter into the counter reading and setup menu, and possibly program the number of cycles after which the next service will be requested.
In case no new value is setup (that is to say that the counter value is left at zero), the signal function for the service request will be disabled and signal will be repeated anymore.

OBSTACLE SENSOR OPERATION

Control unit is equipped with a sophisticated system that allow to detect if there is any obstacle stopped the gate motion. The sensitivity of this system can be adjusted through **[SEnS]** menu: the higher of the setup value, it will be more easy to caused the control unit intervention if there is any obstacle. if you set **[0]**, obstacle detect function will be disabled.

WARNING: apart from any setup sensitivity value, this system will detect an obstacle only if the gate is stopped; therefore, no obstacle braking the gate without stopping it will be detected. In addition, this system does not work when the gate move at **slow down speed**.

The control unit reaction in case an obstacle is detected depends on the **[t.rAL]** menu setup and on the moment when such obstacle is detected.

Slow down disabled
The gate motor on which an obstacle is detected will stop pushing and, for a second fraction, it will be given the command to go backward, so not to keep its gears under stress.

Slow down enabled
Obstacle detection will be performed only if the gate moves at a normal speed. The gate will stop and it will given the command to go backwards for 3 seconds, to take out the obstacle detected. The next **START** command will let the gate motion start again. In case the slow down phase has already begun, no obstacle will be detected and this kind of situation cannot be consider as dangerous since the motor, when working according to its slow down function, will push the obstacle with a very low pressure.
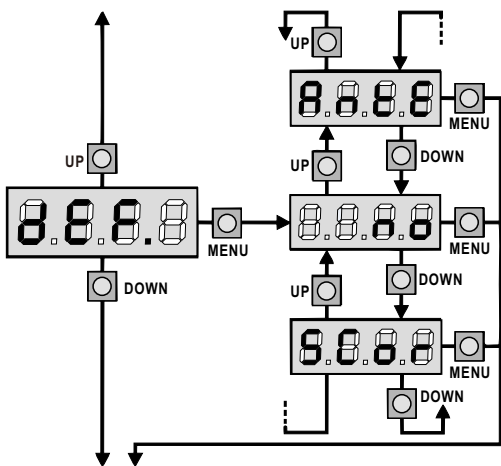
Default configuration loading

All menu items value can be load to the default configuration value (see final default table). There are two sets of value avaliable:

AntE — Values for a two-leaf gate equipped with electric lock.
Scor — Values for a one-leaf sliding gate without electric lock.

After loaded default values, the menu items can be scrolled and each parameter can modify; exit from default menu will automatic skip to the next item.
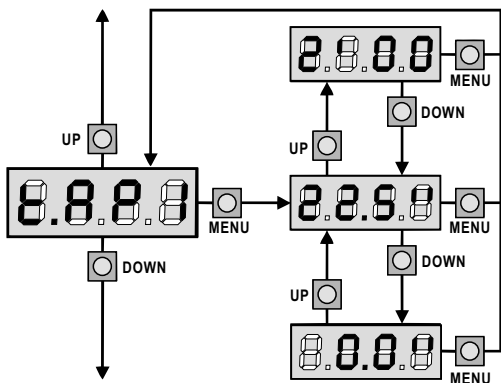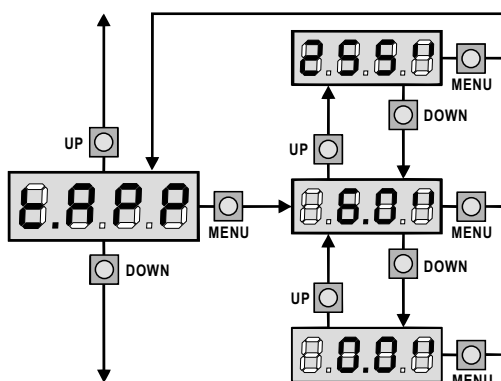
Leaf 1 opening time

Motor 1 will operated for the setup time in the opening phase; If there is an obstacle or reach at the limit switch, the control unit will stop the opening phase and ignored the setup time.
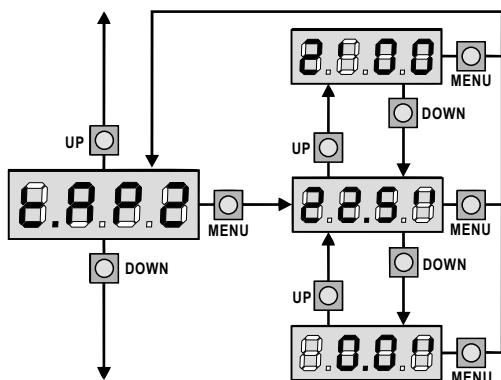
Leaf 2 opening time

Motor 2 will operated for the setup time in the opening phase; If there is an obstacle or reach at the limit switch, the control unit will stop the opening phase and ignored the setup time.

WARNING: if motor 2 is not connected, this item value must set to zero. The control unit will ignored all configurations for motor 2.

Partial opening time (pedestrian access)

When the control unit receives a **PEDESTRIAN START** command, it will open leaf 1 only, for a shorter time. Max setup time equal to [t.AP1].
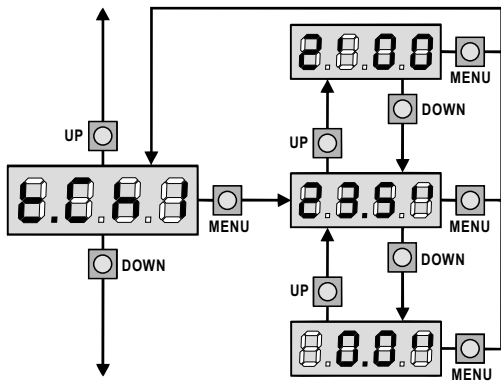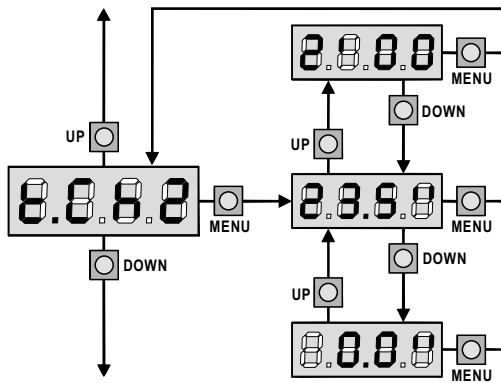
Leaf 1 closing time

Motor 1 will be operated for the setup time in the closing phase;
If there is an obstacle or reach at the limit switch, the control unit
will stop the closing phase before the setup time expired. To avoid
the door not close completely, we recommend to setup time value
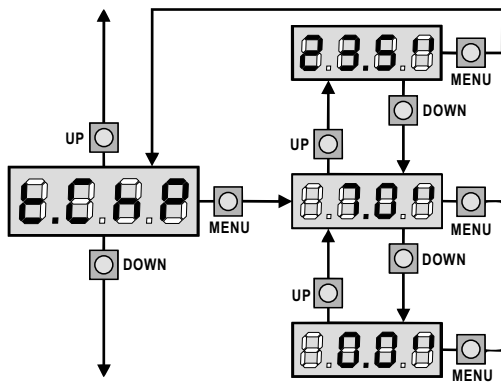longer than **[t.AP1]** opening time.

Leaf 2 closing time

Motor 2 will be operated for the setup time in the closing phase;
If there is an obstacle or reach at the limit switch, the control unit
will stop the closing phase before the setup time expired. To avoid
the door not close completely, we recommend to setup time value
longer than **[t.AP2]** opening time.

Partial closing time (pedestrian access)

When the control unit receives a **[Pedestrian Start]** command, it
will close the gate for a shorter time. Max setup time equal to
[t.Ch1]. To avoid the door not close completely, we recommend
to setup time value longer than **[t.APP]** opening time.
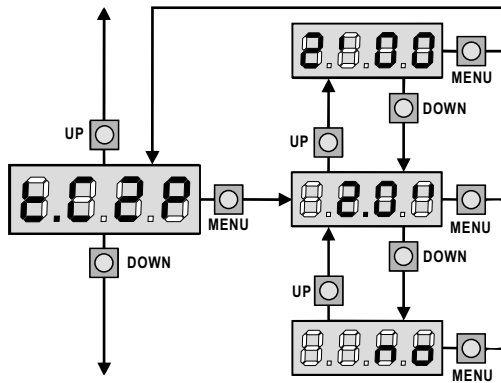
Leaf 2 closing time during pedestrian cycle

During a partial opening cycle (pedestrian access), leaf 2 may move
slightly because of the wind or its own weight; it will cause in closing
phase leaf 1 with leaf 2 overlap, the gate does not closed perfectly.
To avoid this, in the last seconds of the cycle, a light closing force is
apply to leaf 2. If the setup time value longer than leaf 1 closing setup
time, leaf 2 is driven at reduced power all the closing time.
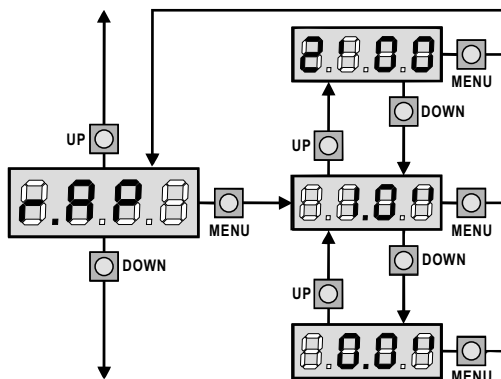
Opening door delay

During the opening phase, leaf 1 must be started before leaf 2, to
avoid both door collide. Leaf 2 will be delayed for the setup time
before opening.
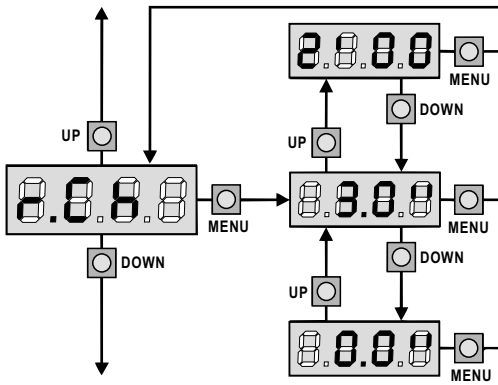
Closing door delay

During the closing phase, leaf 1 must be started after leaf 2, to avoid both door collide. Leaf 1 will be delayed for the setup time before closing.

Closing leaf 2 during delayed opening

With some gates, the leaf 2 is complete closed hold with electric lock pole, In opening phase leaf 1 will open and leaf 2 might be blocked.

This parameter will executed slight closing pressure on leaf 2 during **[r.AP]** time, released the electric lock pole to avoid leaf 2 blocked.

Lock time

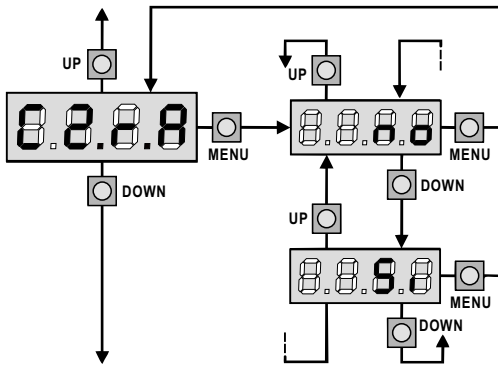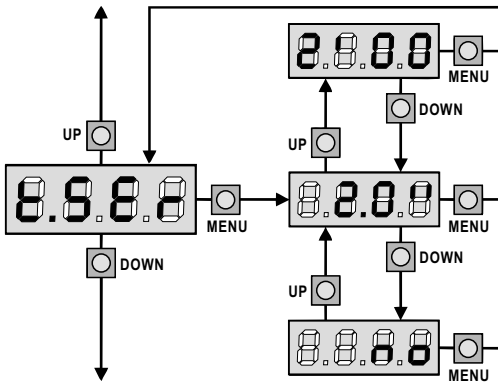Before the opening phase starts, the control unit will energize the electric lock in order to release it and enable the leaf to move. **[t.SEr]** time will set the energizing time for electric lock.

WARNING: If the gate has no electric lock installed, set the value **[no]**.
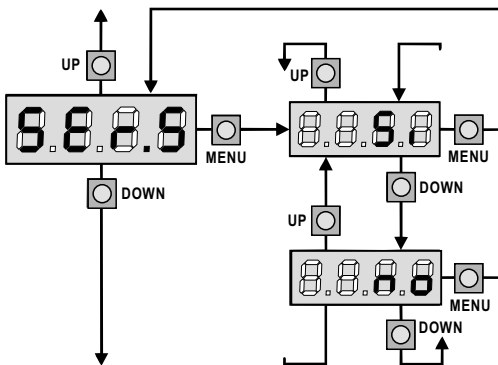
Silent Lock Mode

This menu allow you to select the silent mode for the electric lock.

Si   Silent Mode (140Hz)
no   Standard Mode (50Hz)

CAUTION: In silent mode, the voltage supplied to the electric lock has a higher frequency in order to make the lock less noisy. In some case, there maybe problem when unlocking. If problem occur, select the Standard Mode.
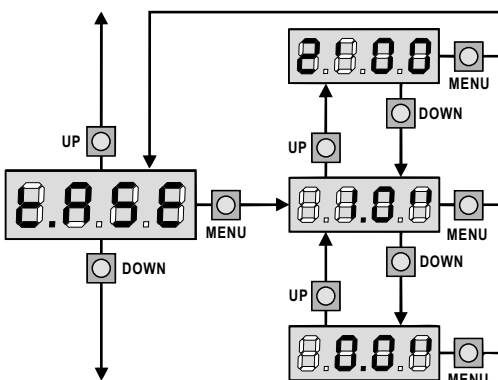
Lock advance time

While the electric lock is energized, the gate will stay standstill for **[t.ASE]** time, to make it released easier.
If **[t.ASE]** value is less than **[t.SEr]**, the electric lock will keep energizing while the gate start moving.

WARNING: If the gate has no electric lock installed, set value **[0.0"]**.

Backlash time

It could be useful to give a closing command to motors, to help the electric lock release.
The control unit give to motors in reduced power in closing direction for the setup time.
The backlash executed before the electric lock release. It is possible to reverse by setting [Ł.ASE] longer than [Ł.ınu]

WARNING: If the gate has no electric lock installed, set value [no].

Pre-blinking time

Before any gate movement, blinker will be activated for [Ł.PrE] time, to warning the gate ready to move.

Different closing pre-flashing time

The control unit will activate the setup time of pre-flashing before closing phase.(while keeping [Ł.PrE] setup time for opening phase).

If [Ł.PCh] set [no] , the pre-flashing time is used the [Ł.PrE] setup time during opening and closing phase.

If only desired to set pre-flashing for closing phase, simply set [Ł.PCh] desired value and [Ł.PrE] set [no].
NOTE: It is not possible to set pre-flashing only for opening phase.

Motor 1 power

This menu allow to adjust the motor 1 power.
The display value is the percentage of maximum motor power.

WARNING: When use hydraulic motor, set value [I00]

Motor 2 power

This menu allow to adjust the motor 2 power.
The display value is the percentage of maximum motor power.

WARNING: When use hydraulic motor, set value [I00]

Start off

When the gate is standstill and begins to move, the initial inertia must be faced, if gate is too heavy, the gate could not move.

When **[SPUn]** set **[Si]**, for the first 2 seconds of motor start, the control unit will ignore **[Pot1]** and **[Pot2]** value. It will give the motor maximum power in order to overcome the gate inertia.

Soft start time

When this function is enable, the control unit will give motor reduce power for soft start within the setup time.

WARNING: If use hydraulic motor, this function might not work correctly. **[t.P.So]** must set **[no]**.

Slow down time

When this function is enable, during the last seconds of motion, the control unit will give motor reduce power, to avoid strong impact with the motor stop end. The maximum available time equal to **[t.APi]**.

WARNING:

This function disable when self-learning procedure is running, in order to calculated the opening and closing time, and enable when self-learning procedure is finish. The control unit will automatic consider the working time delay caused by slowing down.

If partial open time **[t.APP]** is longer than **[t.APi]**, it will be no slowing down during pedestrian opening phase.

If use hydraulic motor, this function might not work correctly. **[t.rAL]** must set **[no]**.

Fast closing time after slowing down

If the gate run slow down in closing phase, it maybe not completely close tighten for electric lock activated.
This function for once the slow down phase finished, the control unit will given a normal speed to motor for setup time, then given one second reverse movement, for electric lock activated properly and avoid the motor under stress.

CAUTION: If the gate not installed with electric lock or slow down is disabled, **[t.CuE]** set **[0.0"]**.

Enabling the motor test

This function can check the control unit work properly without connected with the motor.

Si   test connect with motor.
no   test connect without motor.

WARNING: This test is important for safe to use the gate. We recommend disable the test when the control unit not connected with the motors.
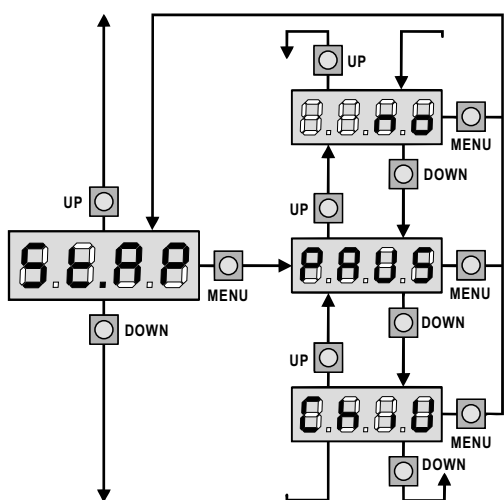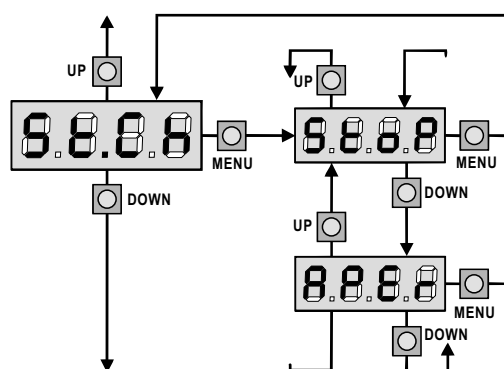
Start command during the opening phase

This function allow the control unit received a **START** command during the gate in the opening phase.

PAUS   The gate stop and go to pause.
ChiU   The gate immediately start closing.
no   The gate continue go with opening phase(command is ignored)

Select option PAUS, to setup the "step-by-step" operation logic.
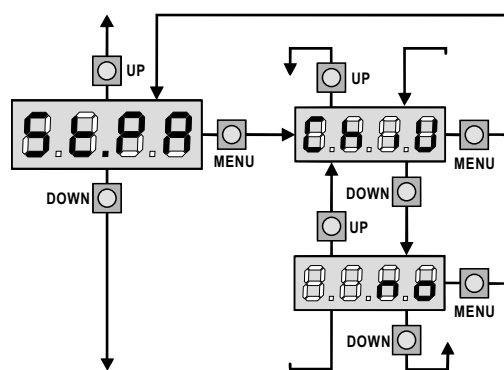Select option no, to setup the 'always open' operation logic.

Start command during the closing phase

This function allow the control unit received a **START** command during the gate in closing phase.

StoP   The gate stop and gate run cycle consider is finished.
APEr   The gate immediately start opening.

Select option StoP, to setup the "step-by-step" operation logic.
Select option APEr, to setup the 'always open' operation logic.

Start command during the pause

This function allow the control unit received a **START** command during the gate in pause phase.

ChiU   The gate immediately start closing.
no   command is ignored.

Select option ChiU, to setup the "step-by-step" operation logic.
Select option no, to setup the 'always open' operation logic.
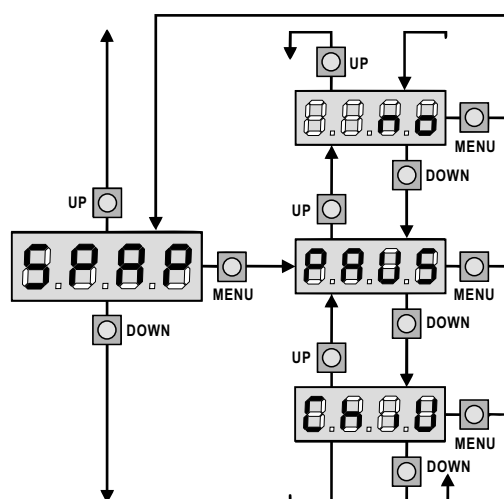
Pedestrian Start during the partial opening phase

This function allow the control unit received a **PEDESTRIAN START** command during the partial opening phase.

PAUS   The gate stop and go to pause
ChiU   The gate immediately start closing
no   The gate continue the opening phase (command is ignored).

WARNING: A **START** command in any phase of partial opening will cause the total opening; the **PEDESTRIAN START** command is always ignored during the total opening.
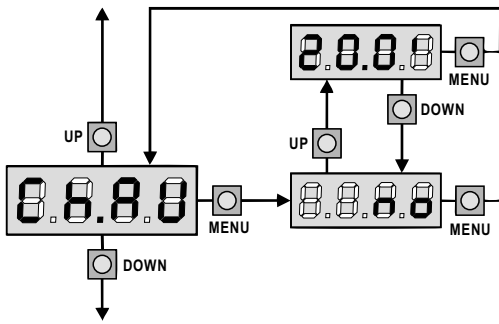
Automatic closing

During the automatic operation in pause phase, the control unit will automatic close the gate when [Ch.AU] setup time expired.

When received a START command, if [St.PA] is set [ChiU], the gate immediately closing and ignored the setup time expired.

If [Ch.AU] is set [no], set as **semi-automatic** operation, the gate can be closed through the START command only; in this case, [St.PA] menu setup value will be ignored.

If the control unit received a STOP command when the gate is in pause, it will go to the **semi-automatic** operation.

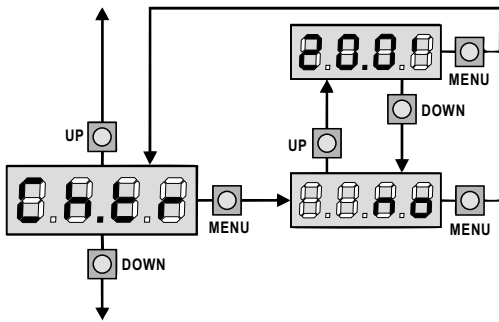## Closing after transit

When photocell interrupt in the automatic operation pause phase, it will restart the [Ch.tr] time value as pause time and count down.

When photocell interrupt in opening, [Ch.tr] time value immediately stored as pause time.

This function allow to fast closing the gate when transit pass through finished. It must set [Ch.tr] time value shorter than [Ch.AU].

If [Ch.AU] is set [no], set as **semi-automatic operation**, this function is disable.
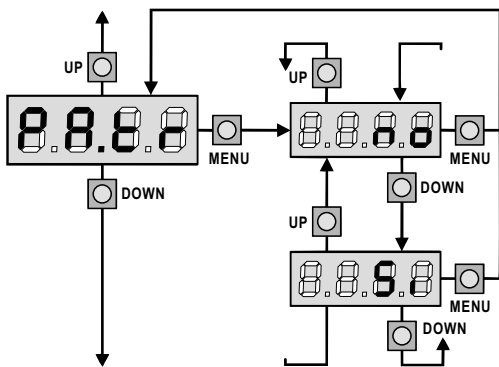
Pause after transit

If this function enable, when in the **automatic operation** pause, photocell is interrupted, the restart pause time is equal to [Ch.tr]
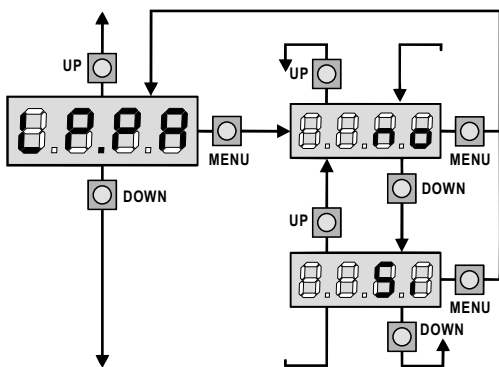
Flash light during pause time

Flash light usually operate during the gate motion only; If this function enabled, flash light will on during the pause time.
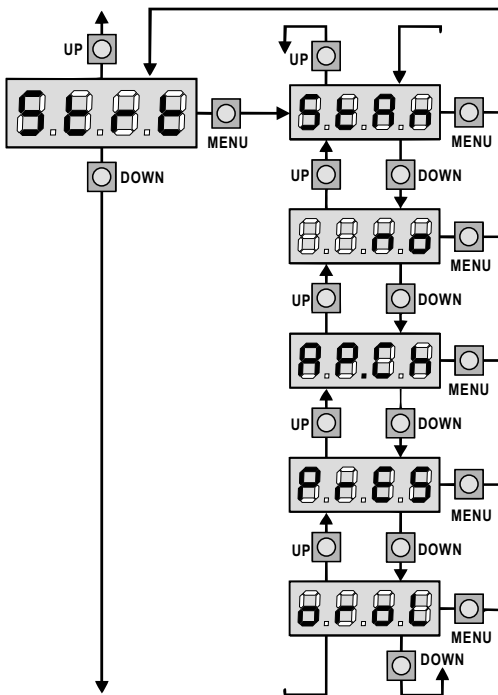
Start input function

This menu allow select the input operation modes:

5ŁAn   START input as START command to control unit. PEDESTRIAN START input as PEDESTRIAN START command to control unit.

no   START and PEDESTRIAN START input from terminal board are disabled. Radio input operation same with **[5ŁAn]** mode.

APCh   START pressed, the gate will open. PEDESTRIAN START pressed, the gate will close.

PrES   Manned operation; START press and hold , the gate will open, released will stop. PEDESTRIAN START press and hold, the gate will close, released will stop.

oroL   Time-operation; START or PEDESTRIAN START press and hold, the gate will open. Released then the pause will start to count down.

Stop Input

This menu allow to select the functions associated with STOP command.
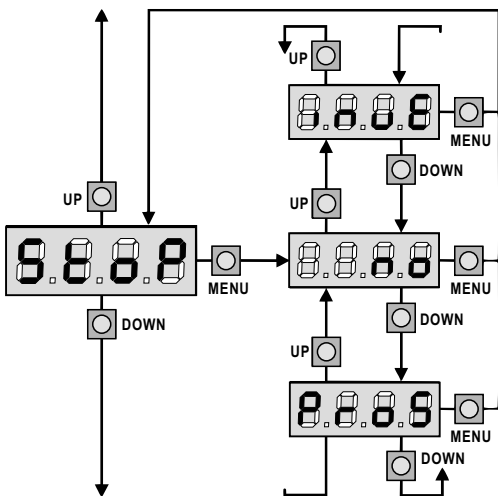
no   The input STOP is not available.
ProS   The input STOP stops the gate; next START command the gate will move in the same direction.
inuE   The input STOP stops the gate; next START command the gate will move in the opposite direction.

The setting of **[5ŁoP]** input also determine the direction for the next START command. If set **[no]** when stopped caused by an intervention of safe edges or obstacle sensor, the next START command will restart the gate in the same direction.

NOTE: during the pause, the STOP command will stop the pause time court down, next START command will always close the gate.
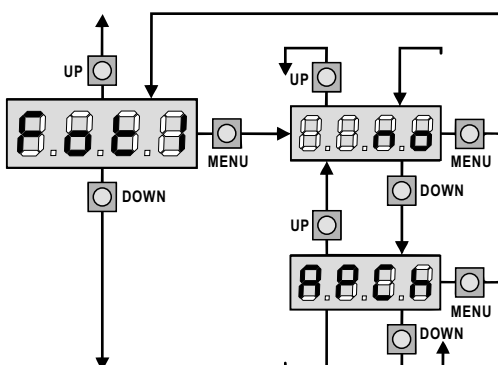
Photocell 1 input

This menu allow to select the function for photocell 1 input. it will active during the opening and closing phase.

no   Input disable(ignored by the control unit). No jumper with the command is required.
APCh   Input enabled.

Photocell input

This menu allow to select the function for photocell 2 input. It will not active during the opening phase.

- no   Input disable(ignored by the control unit). No jumper with the command is required.
- CFCh   Input enable even the gate standstill, the opening gate does not start when photocell is interrupted.
- Ch   Input enable for closing phase only

WARNING: if select this function, you must disable photocell test.
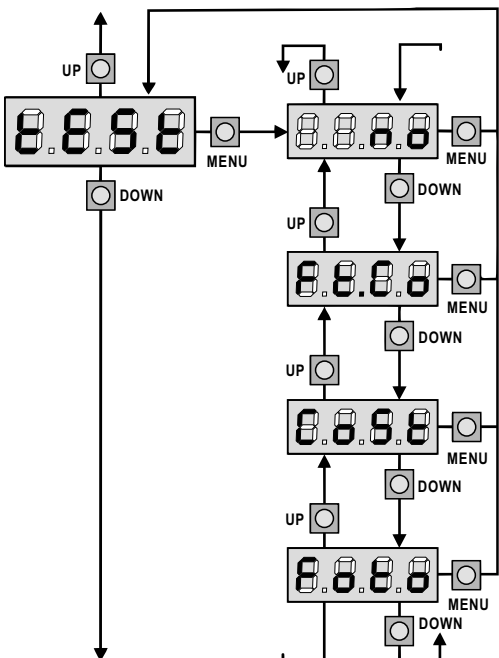
Test of safety devices

In order to achieve safety operation for user, the control unit executed safety device test before a normal work cycle.
If the safety device work properly, the gate will start to move. Otherwise it will standstill and flashing light will light on for 5 seconds. The whole test process less than one seconds.
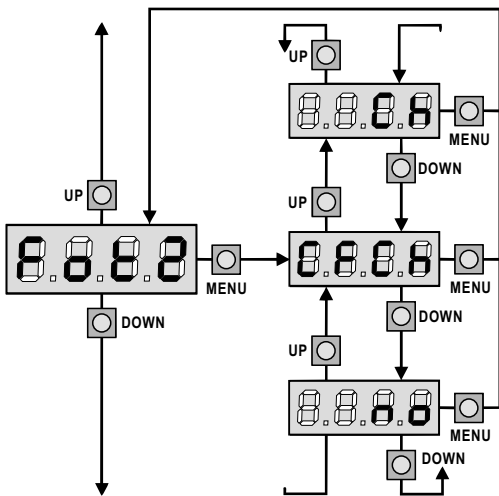
- no   function not active.
- Foto   test enabled only for photocell.
- CoSt   test enabled only for safety edge.
- Ft.Co   test enabled both for photocell and safety edge.

WARNING: Test safety device should be more safety during installation and programming. It must enable the safety device and installed it first, then can test the safety device.
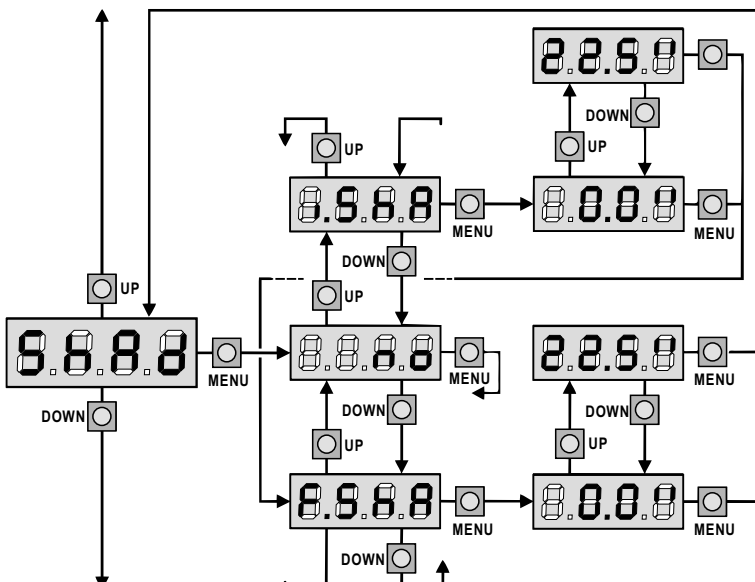
Photocell 2 Shadow Zone

In some installation when pass the passage, the photocell interrupted and the gate cannot complete its closing phase. This function can use **Photocell 2** input, to allow shadow zone for **Photocell 2** temporarily disable.

Please comply with the following procedure to setup the shadow zone limit:
- Completely open the gate with the disabled function, then activate its closing phase and check how many seconds the photocell operate.
- Setup a shorter time [ı.SHR] and longer time in [F.SHR]
- Between [ı.SHR] and [F.SHR], **Photocell 2** will not be active when gate in closing phase.
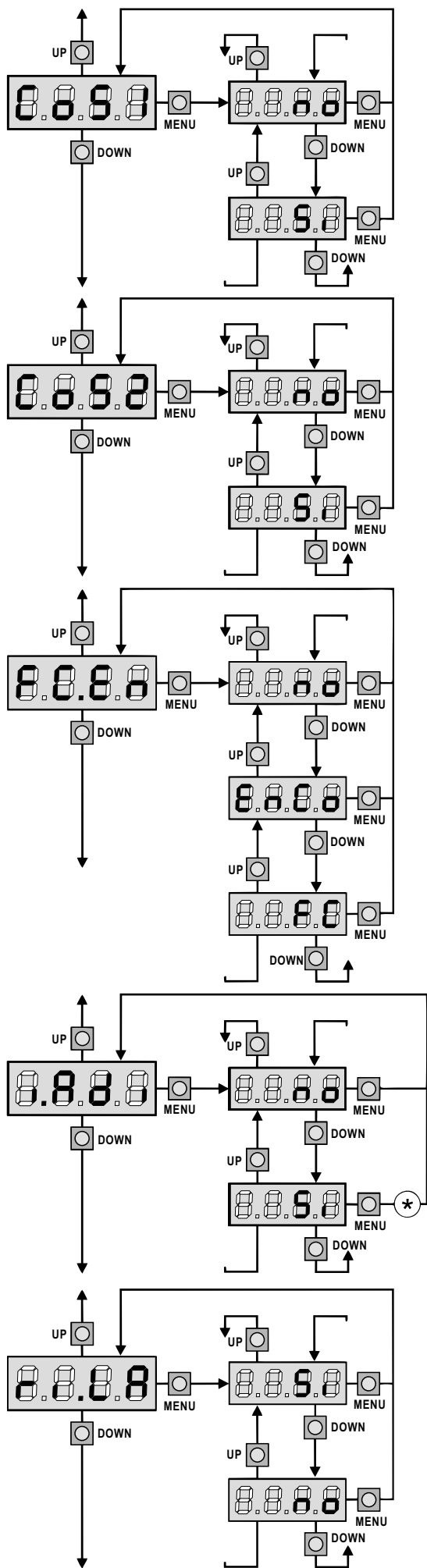
Safety ribbon 1 input

This menu allow to select the safety ribbon 1 input function.

no   Input disabled (ignored byte control unit)
       No jumper with common is required.
Si   Input enable .

Safety ribbon 2 input

This menu allow to select the safety ribbon 2 input function.

no   Input disabled (ignored byte control unit)
       No jumper with common is required.
Si   Input enable .

Limit switch / Encoder input

The control unit allow to connect four mechanical limit switches (normal close contact) or two encoders.
The limit switches are activated by the gate panel motion and inform the control unit that each gate has reached the totally opened or closed position.
The encoders provide the control unit precise position for each gate.

no   Inputs disabled (control unit ignored them)
         It is not necessary to jumper with common.
EnCo Inputs enabled as encoders.
FC   Inputs enabled as limit switches.

No function for i.Adi

Motor Release on Mechanical Stop

When the gate halt against the mechanical stop, the motor is given one second movement in reverse direction, decrease the motor gear tension.

Si   Function enabled
no   Function disabled

Max. Gate Standstill Time

Some type of actuators, like hydraulic actuators, tend to be loose after some hours when standstill, damage the gate mechanical closing.
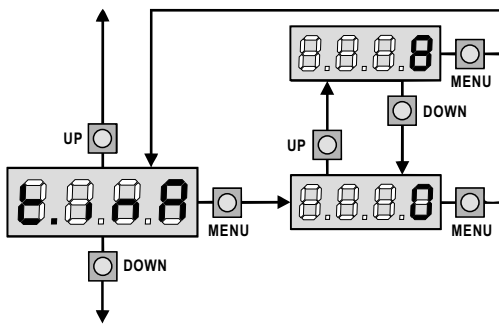
This menu allow to set the max. gate standstill time from 1 to 8 hours. If set [0], this function will be disabled.

If total standstill time longer than the setting time, the control unit given the gate 10 seconds closing phase, the gate will closed perfectly.
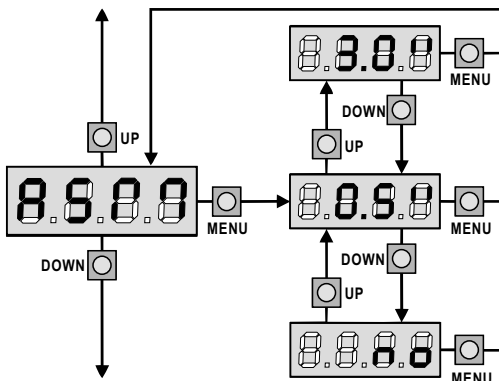
Anti-skid

When gate in opening or closing phase, a reverse command received or the photocell interrupted, the setup time for the reverse movement will be executed, the control unit operate the motor only recover the actually journey. This maybe not enough, particularly for the very heavy gates, because of the inertia for reverse the gate runs an extra space in the previous direction that the control unit is not able to take into account.

If after reverse, the gate does not return to the starting position, it is possible to set an anti-skid time that is added to the time calculated by the control unit in order to recover the inertia.

WARNING: If function [ASM] is disabled, the gate goes backward until it comes to the end stops. In this phase the control unit does not activate the slow down function before the end stops are reached and any obstacle that come across after reverse is considered as an end stops.
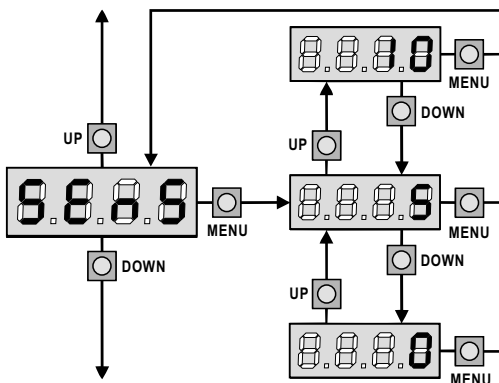
Obstacle Sensor Enable

This menu allow the sensitivity adjustment of the obstacle sensor with 10 levels, from 1 to 10. If set [0], sensor will be disable, increase the value the sensitivity will increase.

The obstacle sensor value adjust depend on the motor power.

If the gate obstacle present is too slow to your expected, you should slight increase the sensitivity value.

If the gate stops when no obstacle are present, you should reduce the sensitivity vale.
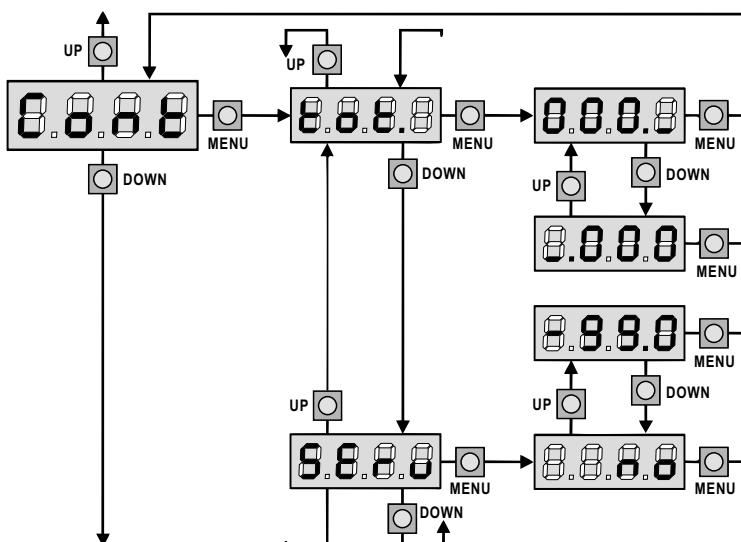
Counter view

This menu allow view the counter of complete opening cycles and it also enable the final user to setup the times of service required.
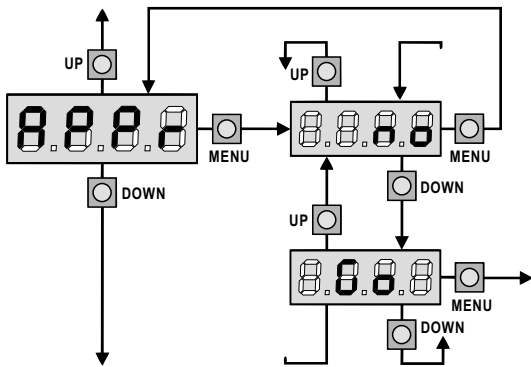
Automatic Learning of the Operation Time

This menu will activate a procedure enable the control unit to automatic find the best solution for the operation time. When you select **[Go]**, configuration menu close and the self-learning cycle start.

WARNING: The procedure of the operation time automatic learning can be start only the **START** input set up as the standard mode **[StAn].**
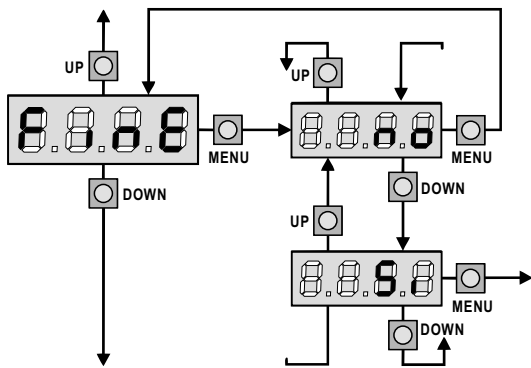
End of Programming

This menu allow to finish the programming (both default and personalized) saving the modify data into memory.

no   Further correction to verify, do not quit the programming.
Si   End of programming.

The modify data have been memorized; the control unit is ready to be use.

DISPLAY	DATA	DESCRIPTION	DEFAULT ScoᴦＳcor	DEFAULT AntE	MEMO DATA
dEF.	no	It does not load the standard data	no	no	
	Scor	Predefined programming for a typical sliding gate			
	AntE	Predefined programming for a typical two-door gate			
t.AP1	0.0" - 2.0'	Gate 1 opening time	22.5"	22.5"	
t.AP2	0.0" - 2.0'	Gate 2 opening time	0.0"	22.5"	
t.APP	0.0" - t.AP1	Opening time of pedestrian gate	6.0"	6.0"	
t.Ch1	0.0" - 2.0'	Gate 1 closing time	23.5"	23.5"	
t.Ch2	0.0" - 2.0'	Gate 2 closing time	0.0"	23.5"	
t.ChP	0.0" - t.Ch1	Closing time of pedestrian gate	7.0"	7.0"	
t.C2P	0.5" - 2.0'	Leaf 2 closing time during pedestrian cycle	no	2.0"	
	no	- Function disabled			
r.AP	0.0" - 2.0'	Gate delay during opening	1.0"	1.0"	
r.Ch	0.0" - 2.0'	Gate delay during closing	3.0"	3.0"	
C2rA	no / Si	Closing leaf 2 during delayed opening	no	no	
t.SEr	0.5" - 2.0'	Electric lock operation time	no	2.0"	
	no	- Lock is not energized (it corresponds to 0)			
SEr.S	Si / no	Silent Locking Mode	Si	Si	
t.ASE	0.0" - 2.0'	Lock advance time	0.0"	1.0"	
t.inu	0.5" - 3.0"	Backlash time	no	no	
	no	- Backlash disabled (it corresponds to 0)			
t.PrE	0.5" - 2.0'	Pre-flashing time	1.0"	1.0"	
	no	- Pre-flashing disabled (it corresponds to 0)			
t.PCh	0.5" - 2.0'	Different closing pre-flashing time	no	no	
	no	- The closing pre-flashing time corresponds to t.PrE			
Pot1	30 - 100%	Motor 1 power	60	60	
Pot2	30 - 100%	Motor 2 power	-	60	
SPUn	no / Si	Start off	no	Si	
t.P.So	0.5" - 3.0"	Slowed down starting time	1.5"	no	
	no	- Slowed down starting disabled			
t.rAL	0.5" - 22.5"	Slow down time	2.0"	2.0"	
	no	- Slow down disabled			
t.CuE	0.0" - 3.0"	Fast closing time after slowing down during closing	0.0"	1.0"	
St.AP		Start in opening	PAUS	PAUS	
	no	- Start command is not available			
	ChiU	- Command close gate			
	PAUS	- Stop the gate and goes in pause			
St.Ch		Start in closing	StoP	StoP	
	StoP	- Start command stop the gate			
	APEr	- Start command open the gate			
tE.M	Si / no	Enabling the motor test	Si	Si	
St.PA		Start in pause	ChiU	ChiU	
	no	- Start command is not available			
	ChiU	- Start command closes the gate			
SPAP		Pedestrian in opening	PAUS	PAUS	
	no	- Pedestrian start command is not available			
	ChiU	- Pedestrian start command closes the gate			
	PAUS	- Gate goes in pause			
Ch.AU		Automatic closing	no	no	
	no	- The automatic closing is not active (it corresponds to 0)			
	0.5" - 20.0'	- The gate closes after the setup time			
Ch.tr		Closing after passage	no	no	
	no	- Closing after passage disabled			
	0.5" - 20.0'	- Gate stop for a time to be set between 0.5" to 20'			
PA.tr	no / Si	Pause after transit	no	no	

DISPLAY	DATA	DESCRIPTION	DEFAULT SCor	DEFAULT AntE	MEMO DATA
LP.PA	no / Si	Flashlight in pause	no	no	
St.rt		Operation modes	StAn	StAn	
	no	- Start inputs from terminal board are disabled			
	StAn	- Standard operation			
	APCh	- Separated opening and closing commands			
	PrES	- Manned operation			
	oroL	- Timer operation			
StoP		STOP input	no	no	
	no	- STOP input not available			
	inuE	- STOP command stops the gate: START command starts			
		moving in the opposite direction			
	ProS	- STOP command stops the gate: pressing the START command			
		gate continues the motion			
Fot1		PHOTO 1 input	APCh	no	
	APCh	- Input is available for the connection of the photocell			
	no	- Not available			
Fot2		PHOTO 2 input	CFCh	CFCh	
	CFCh	- Photocell is active in closing and also when the gate is still			
	no	- Not available			
	Ch	- Photocell is active during the closing			
tESt		Test of safety devices	no	no	
	no	- Function not active			
	Foto	- Test enabled only for photocells			
	CoSt	- Test enabled only for safety edges			
	Ft.Co	- Test enabled either for photocells or for safety edges			
ShAd		Photocell 2 shadow zone	no	no	
	no	- Function disabled			
	F.ShA	- FOTO2 disabling higher time			
	i.ShA	- FOTO2 disabling lower time			
CoS1	no / Si	Border 1 input (fixed border)	no	no	
CoS2	no / Si	Border 2 input (mobile border)	no	no	
FC.En		Limit switch / Encoder input	no	no	
	no	- Inputs disabled (the controller ignores them)			
	EnCo	- Inputs enabled as encoders			
	FC	- Inputs enabled as limit switches			
riLA	Si / no	Motor Release on Mechanical Stop	Si	Si	
t.inA	0 - 8	Max. gate quiescent time	0	0	
ASM	0.5" - 3.0"	Anti-skid	0.5"	0.5"	
	no	- Function disabled			
SEnS	0 - 10	Obstacle sensor level	S	S	
Cont		Counter viewing	tot	tot	
	tot.	- Total number of completed cycles (views in thousands or in units)			
	SEru	- Number of cycles before the next request for service (such a number			
		has been rounded off to hundreds and it can be set up on 1000-step;			
		in case it is set up on 0, the request will be disabled and no will be viewed)			
APPr		Automatic learning of the operation time	no	no	
	no	- Function disabled			
	Go	- Start up of the automatic learning procedure			
FinE		End of programming	no	no	
	no	- It does not exit from the program menu			
	Si	- It exits from the program menu by storing the setup parameters			

OPERATION DEFECTS

This paragraph shows some possible operation defects, along with their cause and applicable remedy.

ON/OFF led does not switch on
It means that there is on voltage on control unit.
1. Before acting on the control unit, disconnect through the disconnecting switch on the power line and remove the power supply terminal.
2. Be sure that there is no voltage break upstream the control unit.
3. Check whether the fuse is burn-out, if so replace it with same value.

OVERLOAD led is on
It means that there is an overload on accessory power supply.
1. Remove the extractable part containing terminals **11** to **21**. OVERLOAD led will switch off.
2. Remove the overload cause.
3. Reinsert the terminal board extractable part and check that this led is not on again.

Error 1
The following writing appears on display when you exit from programming:

It means that changed data could not be stored.
This kind of defect has no remedy and the control unit must be sent back for repair.

Error 2
When a **START** command is given and the gate does not open and the following writing appears on display:

It means that triac test failed.
Before sending the control unit back for repair, be sure that motor have been properly connected.
If motor 2 is not connected, be sure that **[t.AP2]** set **[0.0"]**.

Error 3
When a **START** command is given and the gate does not open and the following writing appears on display:

It means that the photocell test failed.
1. Be sure that no obstacle interrupted the photocell beam when the **START** command was given.
2. Be sure that photocell, as enabled by their relevant menus, have been installed actually.
3. If you have photocell 2, be sure that **[Fot2]** set **[CFCh]**.
4. Be sure that photocell are powered and working; when you interrupt their beam, you should hear the relay tripping.

Error 4
After few centimeters during the opening phase the gate stop and the display show:

It means that the limit switches in closing phase have not been release. Make sure that the limit switches are correctly connect. When the gate in opening phase, let the limit switch open.
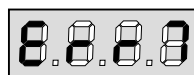
Error 5
Once given a **START** command, the gate does not open and the display show:

It means that the test of the safety edges failed. Make sure that the control unit driving the safety edges is correctly connected and properly working. Make sure that the safety edges enabled by menu are actually installed.

Error 7
This indicates an error in the encoder operation.

There are three possible cause:
1. Encoder is connected to the terminals, if the gate move a short distance then stop. This means that the connection to the encoder for the gate panel is reversed. Exchange terminal **22** with **23**, or **26** with **27**.
2. With the encoder enabled, once a **START** command is received but not work with desired time. This means that the encoder have not been initialized. For the encoder to operate correctly, the self-learning procedure must be performed.
3. With the encoder enabled and initialized, a few seconds after movement begin. This means that an encoder is not work correctly. Encoder fault or connection broken.

Too long pre-blinking
When a **START** command is given and the blinker switches on immediately but the gate is late in opening, it means that the setup cycle count down expired and the control unit show that service is required.