230 VAC MULTIFUNCTION CONTROL UNIT
051D

- **Motor torque adjustment**
- **Slowdown (soft start)**
- **Obstacle detection**
- **Programmable outputs**
- **Multifuction inputs**
- **Positive or negative inputs**
- **Dead man's function**
- **Soft start**

- **1 motor mode**
- **Flashing light 230 vac/vdc**
- **Photocells test**
- **Motors test**
- **Compatible with plug in Faac radio receiver**
- **Terminal block compatible with Faac 455d control unit**
- **Easy programming**
- **Diagnostic through display**

Technical data:
- Motors: 600W each motors
- Flashing lamp: max 60W 230 VAC
- Power supply: 24 VDC max 250mA

🇮🇹 **USER MANUAL**

SUMMARY

WARNINGS FOR THE INSTALLER - GENERAL SAFETY INSTRUCTIONS

1. Read the instructions carefully before installing the control unit.

2. Keep these instructions for future reference.

3. This product has been designed and manufactured exclusively for the use intended and indicated in this documentation. Any other use not expressly indicated could compromise the integrity of the product and/or constitute a source of danger.

4. For the safety of all persons, the instructions given in this manual must be carefully followed. Incorrect installation or use of the product can cause serious personal injury.

5. Packaging materials must not be left within the reach of children, as they are potential sources of danger, and must be properly disposed of.

6. AB Tecno Srl declines all responsibility for any consequences arising from improper use or use other than that for which the device was designed and constructed.

7. AB Tecno Srl shall not be held liable for non-compliance with current EC standards in the construction of the motorised closing device, or for any deformation that may occur during use.

8. Do not install the appliance in an explosive atmosphere: the presence of flammable gases or fumes constitutes a serious safety hazard.

9. Installation must be carried out in accordance with standards EN 12453 and EN 12445. For non-EU countries, in order to achieve a sufficient and adequate level of safety, the above-mentioned standards must be observed in addition to the individual national regulatory references.

10. Before carrying out any work on the system, disconnect any batteries and switch off the power supply.

11. An omnipolar switch with contact opening distance equal to or greater than 3 mm should be installed on the power supply of the automatic gate. The use of a 6A thermomagnetic circuit breaker with omnipolar switch is recommended.

12. Check that there is a differential switch with a 0.03A threshold upstream of the system.

13. Check that the earthing system is properly installed and connected to the metal parts of the enclosure.

14. Also the correct operation of the automated devices with an internal anti-crushing safety function must be checked in accordance with the standards indicated in point 9.

15. The safety devices (standard EN 12978) protect any danger areas from mechanical risks related to movement, such as crushing, dragging, shearing and lifting.

16. For each system, we recommend the use of at least one warning light (e.g. flashing light), as well as an appropriately fixed and clearly visible warning sign.

17. AB Tecno Srl declines all responsibility concerning the safety and proper operation of the automatic gate, in the event that components not manufactured by AB Tecno Srl are used when installing the system.

18. The installer must provide the End User with all information concerning manual operation of the automatic gate in the event of an emergency.

19. Do not allow children or other persons to stand near the system during operation.

20. Keep any remote control or triggering device out of the reach of children to prevent unintentional operation of the automatic gate.

21. The transit of people and vehicles is only permitted when the automatic gate is fully open.

22. The user of the automatic gate must refrain from any attempt at repair and/or direct intervention and must contact qualified personnel only. Otherwise, AB Tecno Srl declines all liability for any consequences.

23. Anything not expressly provided for and indicated in these instructions is not permitted.

230V CONNECTIONS - MOTORS AND FLASHING LAMPS

PLUG IN FOR RECEIVER

FUSE 5A

230 VAC

PLUG IN FOR RECEIVER 2

THE LIGHT IS ON WHEN ONE OF THE TWO MOTORS IS MOVING
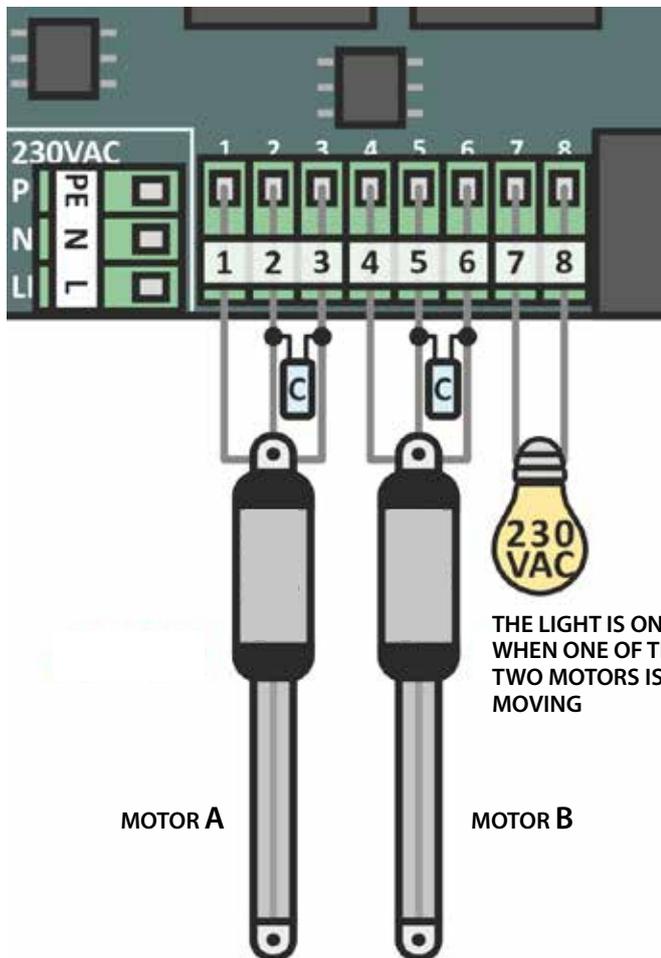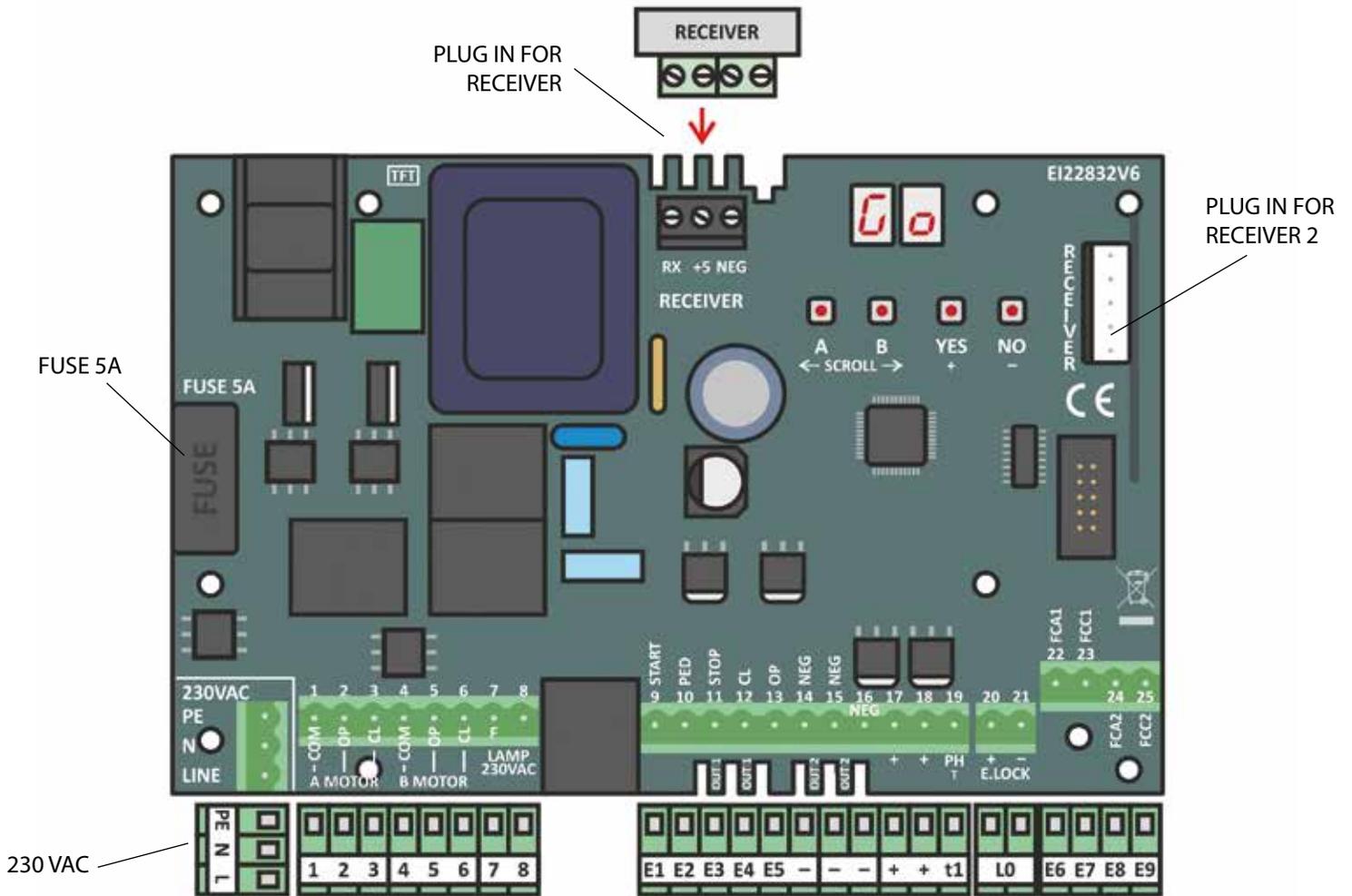
MOTOR **A**

MOTOR **B**

GENERAL		
PE	**N**	**L**
GROUND	NEUTRAL	PHASE

MOTOR A (600 W - 230 VAC)		
1	**2**	**3**
COMMON	OPEN	CLOSE

MOTOR B (600 W - 230 VAC)		
4	**5**	**6**
COMMON	OPEN	CLOSE

LIGHT (60 W - 230 VAC)	
7	**8**
COMMON	OPEN

INSTALLATION LAYOUT

TYPICAL SWING GATE INSTALLATION

Pedestrian access

Closing photocells

Flashing lamp

Antenna

Motor B

Motor A (opens first)

INTERNAL AREA OF THE GATE

opening photocells
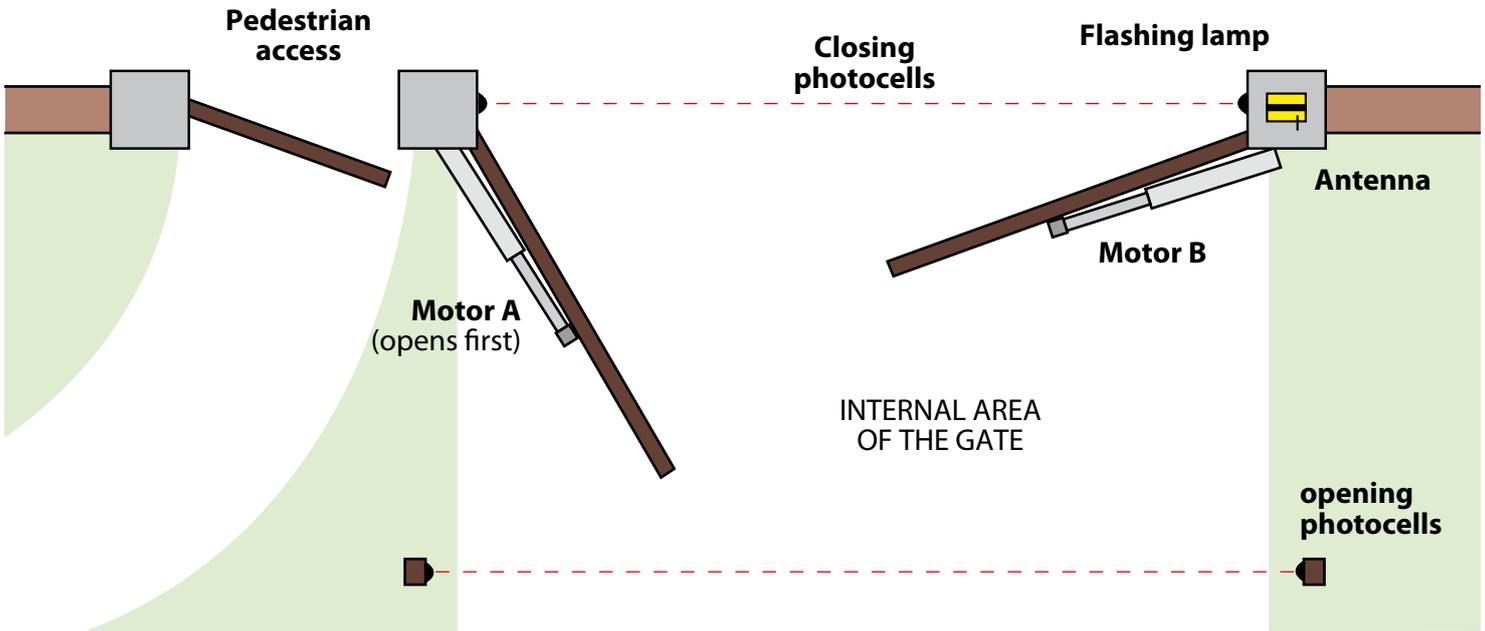
The system must have a physical limit in the opening and closing movement

051D

MDR

Motor A (opens first)
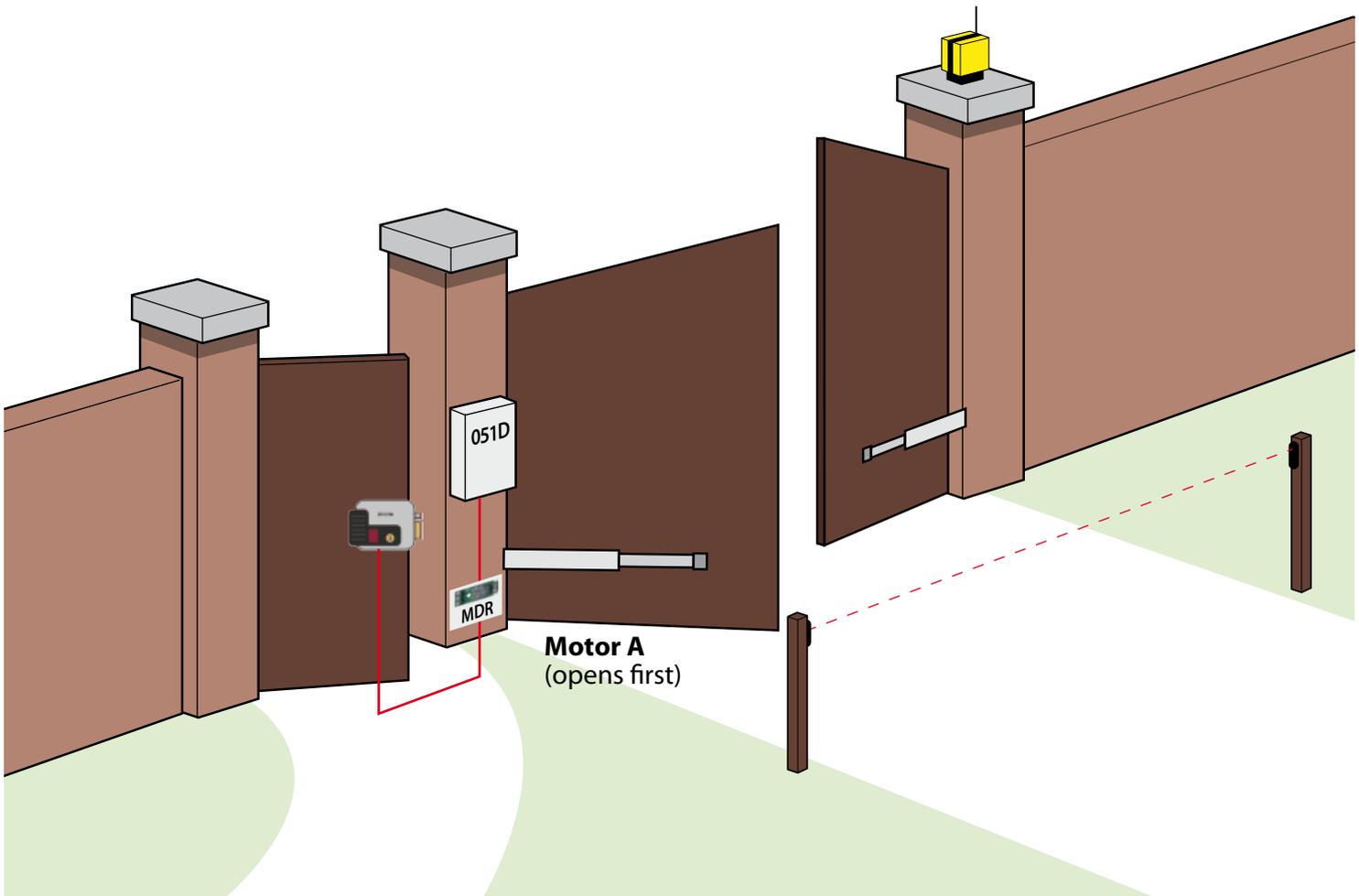
INPUTS CONNECTION - NEGATIVE COMMON

To set the inputs with negative common, E0 = 02
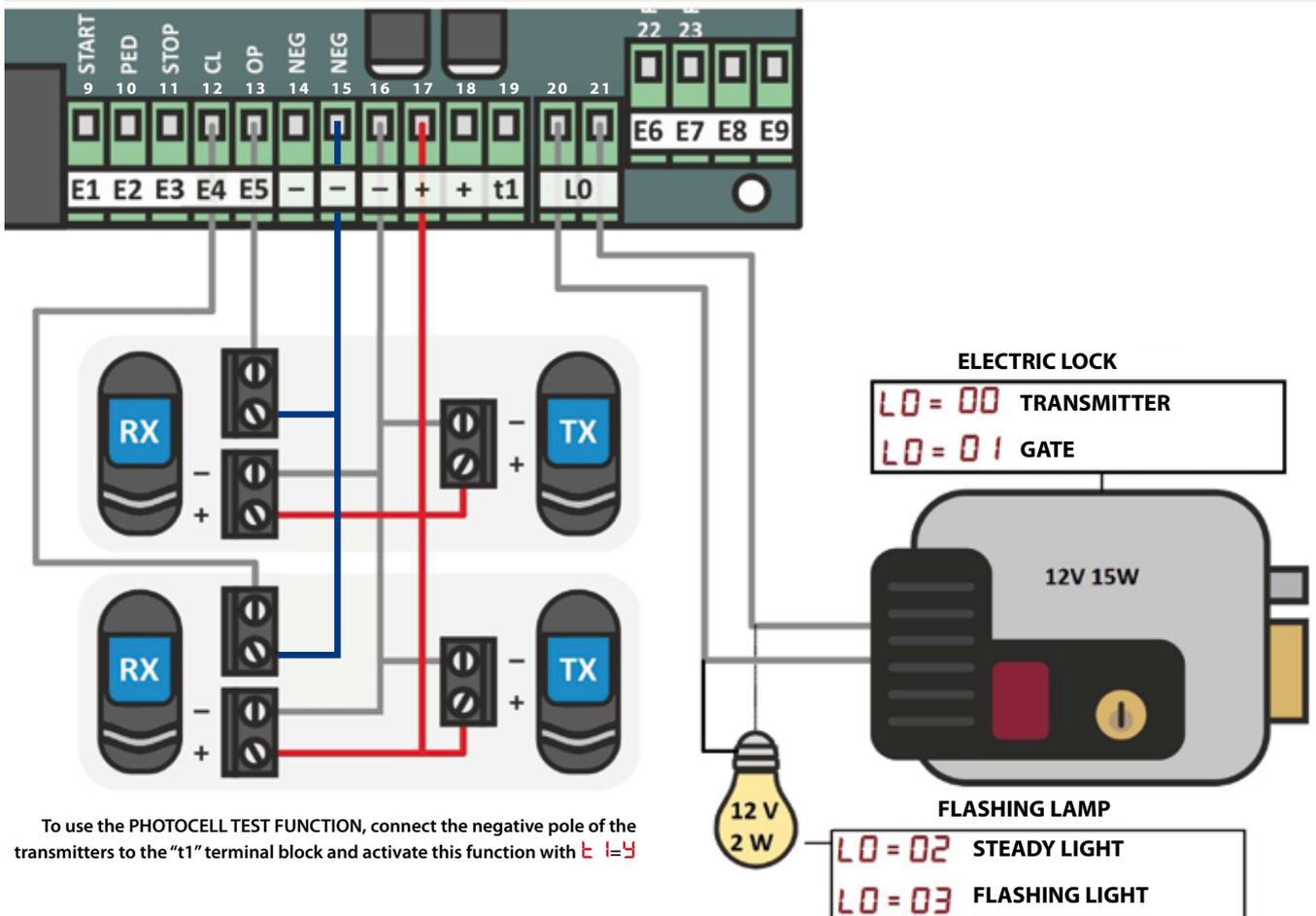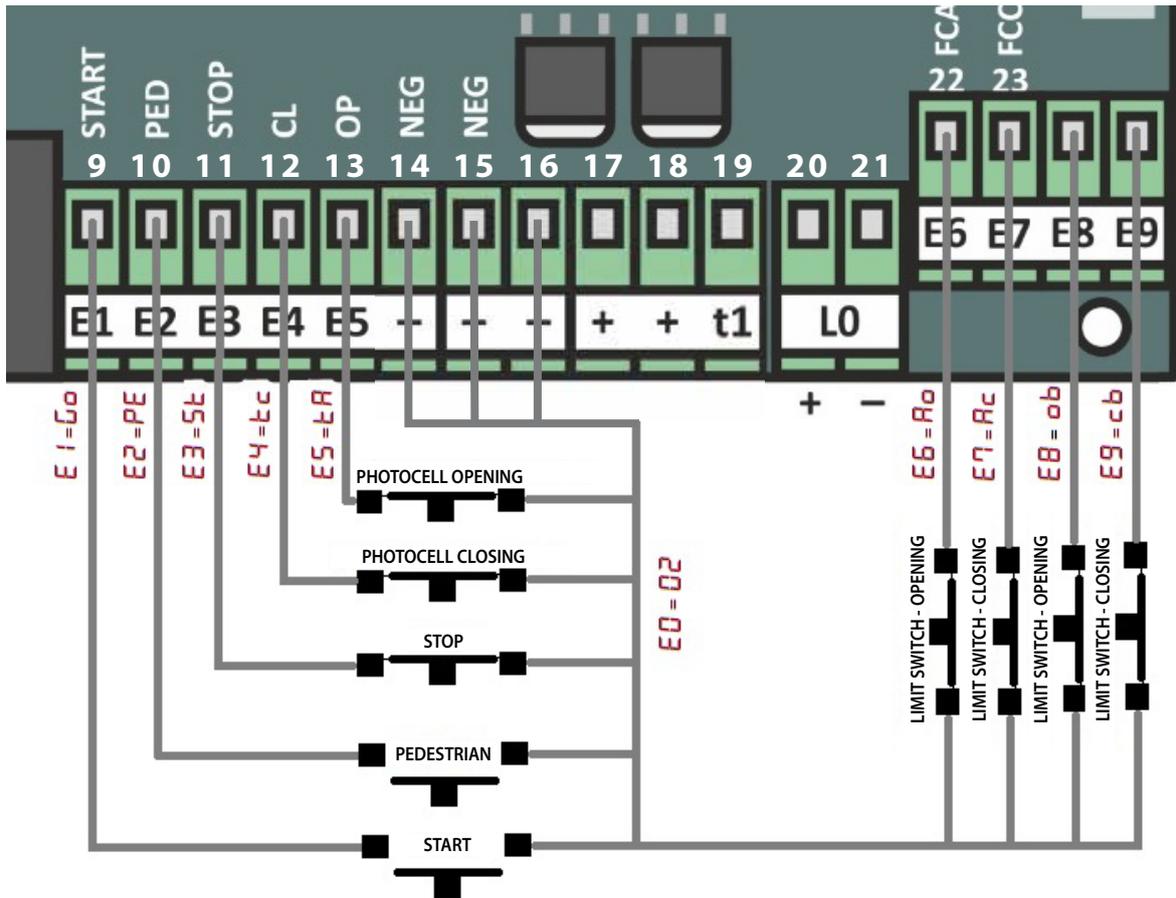
To use the **PHOTOCELL TEST FUNCTION**, connect the negative pole of the transmitters to the "t1" terminal block and activate this function with $t\,1=4$

ELECTRIC LOCK

| L0 = 00 | TRANSMITTER |
| L0 = 01 | GATE |

FLASHING LAMP

| L0 = 02 | STEADY LIGHT |
| L0 = 03 | FLASHING LIGHT |

INPUTS CONNECTION - POSITIVE COMMON

To set the inputs with positive common, E0 = 01
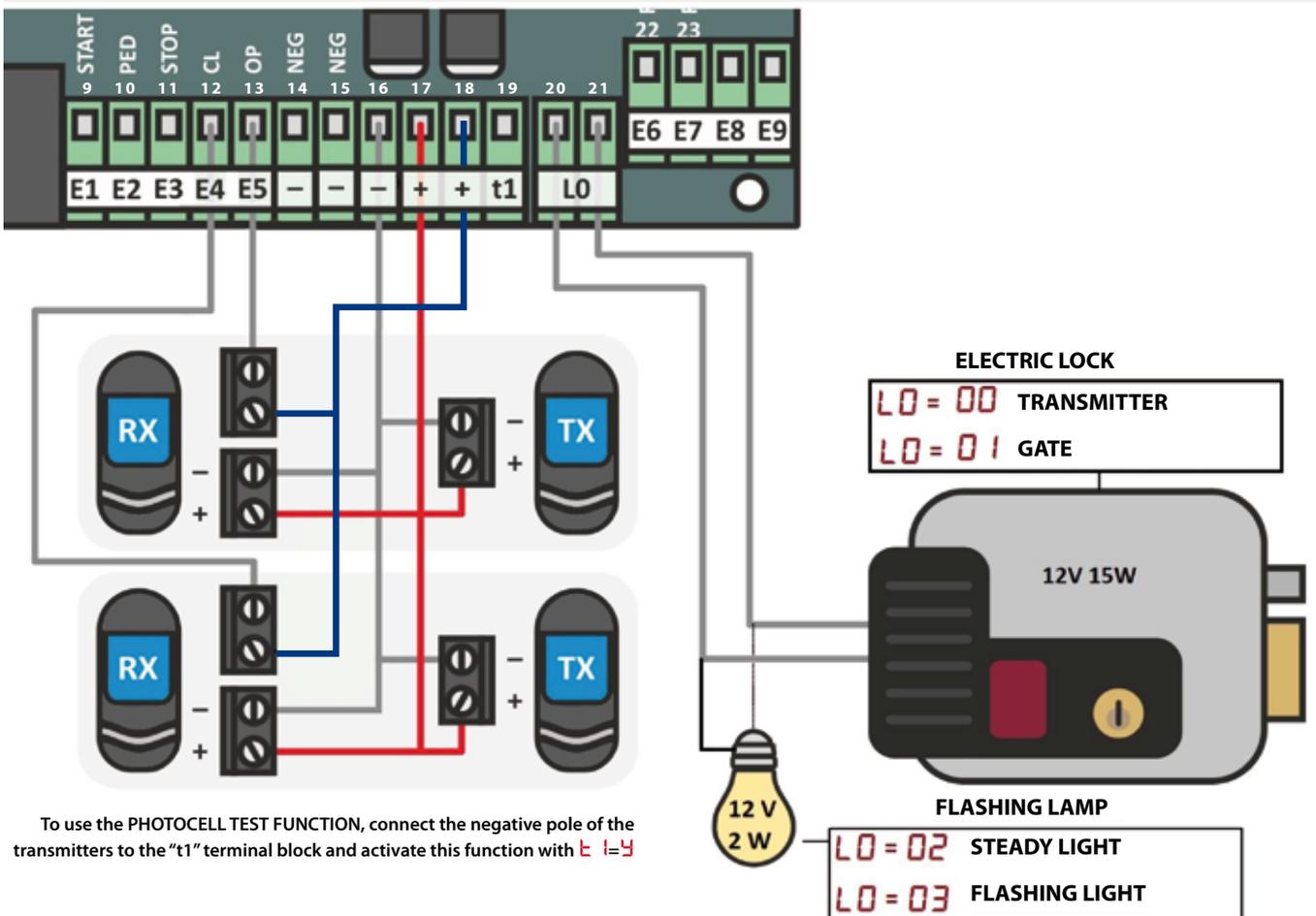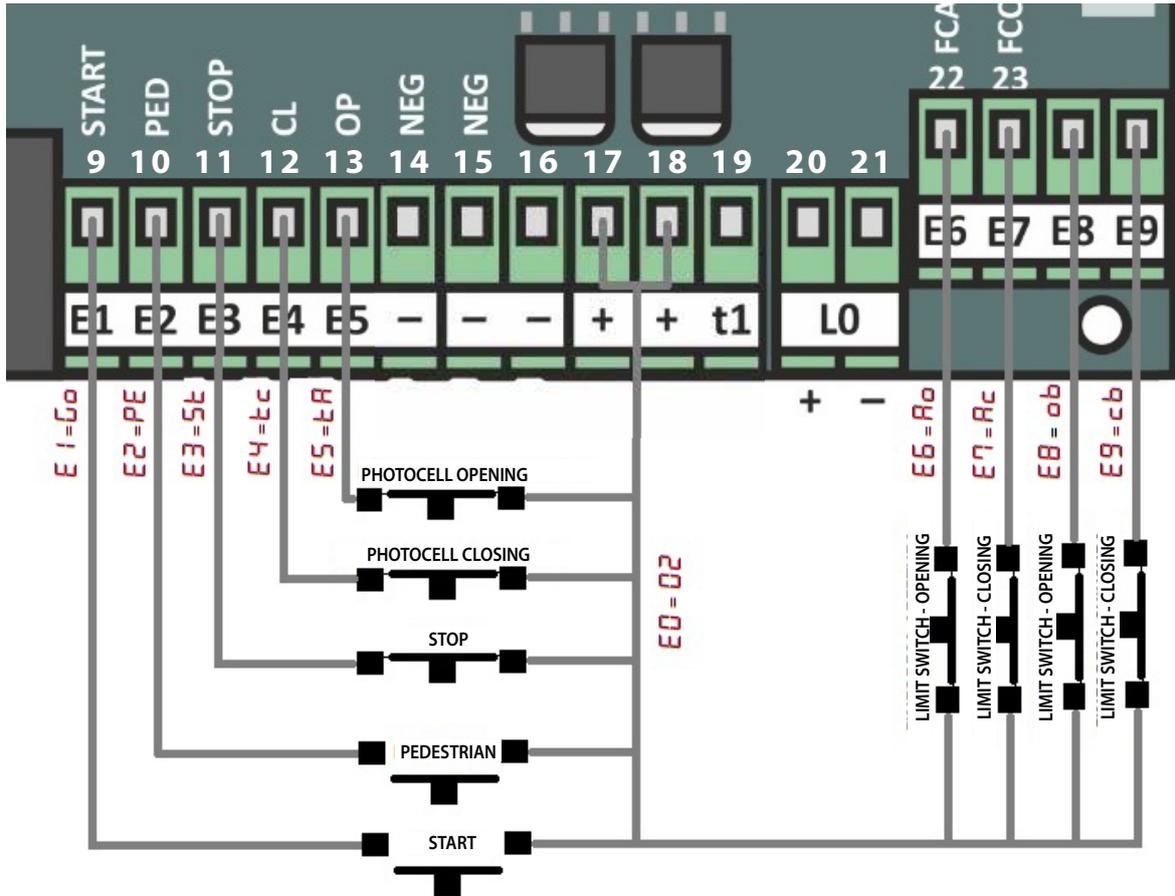
To use the PHOTOCELL TEST FUNCTION, connect the negative pole of the transmitters to the "t1" terminal block and activate this function with $t1=4$

ELECTRIC LOCK

$L0 = 00$ TRANSMITTER

$L0 = 01$ GATE

FLASHING LAMP

$L0 = 02$ STEADY LIGHT

$L0 = 03$ FLASHING LIGHT

12V 15W

12 V 2 W

TERMINAL BLOCK SETTINGS

Each terminal block is linked to a parameter: they can all be identified with letter E.

$E0$ **INPUTS, NEGATIVE-POSITIVE COMMON**	2 *NEGATIVE*	$E5$ **TERMINAL BLOCK 22 - E5**	$\sqcap$ *AUTO-ENABLE*
$E1$ **TERMINAL BLOCK 9 - E1**	Go *START*	$E6$ **TERMINAL BLOCK 23 - E6**	$\sqcap$ *AUTO-ENABLE*
$E2$ **TERMINAL BLOCK 10 - E2**	PE *PEDESTRIAN*	$E7$ **TERMINAL BLOCK 24 - E7**	$\sqcap$ *AUTO-ENABLE*
$E3$ **TERMINAL BLOCK 11 - E3**	$\sqcap$ *AUTO-ENABLE*	$E8$ **TERMINAL BLOCK 25 - E8**	$\sqcap$ *AUTO-ENABLE*
$E4$ **TERMINAL BLOCK 12 - E4**	$\sqcap$ *AUTO-ENABLE*	$E9$ **TERMINAL BLOCK 26 - E9**	$\sqcap$ *AUTO-ENABLE*

$E0$ INPUTS, NEGATIVE-POSITIVE COMMON

The inputs of the terminal blocks can be set both in NEGATIVE and POSITIVE COMMON.
To select **NEGATIVE COMMON** (**terminal block 14, 15, 16** with tag -) set $E0 = 2$.
To select **POSITIVE COMMON** (**terminal blocks 17, 18** with tag +) set $E0 = 1$.

$E1$ TERMINAL BLOCK 9 - E1 - NORMALLY OPEN

Terminal block 9 is associated with a **normally open (N.O.)** contact. The parameters that can be set are:
$\sqcap$ **DISABLED,** Go **START,** PE **PEDESTRIAN,** Po **OPEN DEAD MAN,** Pc **CLOSE DEAD MAN,** EL **ELECTRIC LOCK.**

$E2$ TERMINAL BLOCK 10 - E2 - NORMALLY OPEN

Terminal block 10 is associated with a **normally open (N.O.)** contact. The parameters that can be set are:
$\sqcap$ **DISABLED,** Go **START,** PE **PEDESTRIAN,** Po **OPEN DEAD MAN,** Pc **CLOSE DEAD MAN,** EL **ELECTRIC LOCK.**

$E3$ TERMINAL BLOCK 11 - E3 - NORMALLY CLOSED

Terminal block 11 is associated with a **normally closed (N.C.)** contact. The parameters that can be set are:
$\sqcap$ **DISABLED,** St **STOP.** This control unit is supplied with the standard setting where **terminal block 11** is disabled ($E3 = \sqcap$). When a **NORMALLY CLOSED** contact is connected to **terminal block 11**, it is automatically detected by the control unit that sets the parameter of the terminal block to the correct safety fuction, in this case $E3 = St$ **STOP**. This feature is called **AUTO-ENABLE**.

$E4$ TERMINAL BLOCK 12 - E4 - NORMALLY CLOSED

Terminal block 12 is associated with a **normally closed (N.C.)** contact. The parameters that can be set are:
$\sqcap$ **DISABLED,** tc **CLOSING PHOTOCELL - MODE 1, and** td **CLOSING PHOTOCELL - MODE 2**. This control unit is supplied with the standard setting where **terminal block 12** is disabled ($E4 = \sqcap$). When a **NORMALLY CLOSED** contact is connected to **terminal block 12**, it is automatically detected by the control unit that sets the parameter of the terminal block to the correct safety fuction, in this case $E4 = tc$ **CLOSING PHOTOCELL - MODE 1**. This feature is called **AUTO-ENABLE**.

$E5$ TERMINAL BLOCK 13 - E5 - NORMALLY CLOSED

Terminal block 13 is associated with a **normally closed (N.C.)** contact. The parameters that can be set are:
$\sqcap$ **DISABLED,** tA **OPENING PHOTOCELL,** tc **CLOSING PHOTOCELL - MODE 1**. This control unit is supplied with the standard setting where **terminal block 13** is disabled ($E5 = \sqcap$). When a **NORMALLY CLOSED** contact is connected to **terminal block 13**, it is automatically detected by the control unit that sets the parameter of the terminal block to the correct safety fuction, in this case $E5 = tA$ **OPENING PHOTOCELL**. This feature is called **AUTO-ENABLE**.

$E6$ TERMINAL BLOCK 14 - E6 - NORMALLY CLOSED

Terminal block 14 is associated with a **normally closed (N.C.)** contact. The parameters that can be set are:
$\sqcap$ **DISABLED,** Ao **LIMIT SWITCH OPENING MOTOR A**. This control unit is supplied with the standard setting where **terminal block 14** is disabled ($E6 = \sqcap$). When a **NORMALLY CLOSED** contact is connected to **terminal block 14**, it is automatically detected by the control unit that sets the parameter of the terminal block to the correct safety fuction, in this case $E6 = Ao$ **LIMIT SWITCH OPENING MOTOR A**. This feature is called **AUTO-ENABLE**.

TERMINAL BLOCK SETTINGS

E7   TERMINAL BLOCK 22 - E7 - NORMALLY CLOSED

Terminal block 22 is associated with a **normally closed (N.C.)** contact. The parameters that can be set are:
n **DISABLED,** Ac **LIMIT SWITCH CLOSING MOTOR A.** This control unit is supplied with the standard setting where **terminal block 22** is disabled (E7 = n). When a **NORMALLY CLOSED** contact is connected to **terminal block 22**, it is automatically detected by the control unit that sets the parameter of the terminal block to the correct safety fuction, in this case E7 = Ac **LIMIT SWITCH CLOSING MOTOR A**. This feature is called **AUTO-ENABLE**.

E8   TERMINAL BLOCK 23 - E8 - NORMALLY CLOSED

Terminal block 23 is associated with a **normally closed (N.C.)** contact. The parameters that can be set are:
n **DISABLED,** ob **LIMIT SWITCH OPENING MOTOR B.** This control unit is supplied with the standard setting where **terminal block 23** is disabled (E8 = n). When a **NORMALLY CLOSED** contact is connected to **terminal block 23**, it is automatically detected by the control unit that sets the parameter of the terminal block to the correct safety fuction, in this case E8 = ob **LIMIT SWITCH OPENING MOTOR B**. This feature is called **AUTO-ENABLE.**

E9   TERMINAL BLOCK 24 - E9 - NORMALLY CLOSED

Terminal block 24 is associated with a **normally closed (N.C.)** contact. The parameters that can be set are:
n **DISABLED,** ob **LIMIT SWITCH OPENING MOTOR B.** This control unit is supplied with the standard setting where **terminal block 24** is disabled (E9 = n). When a **NORMALLY CLOSED** contact is connected to **terminal block 24**, it is automatically detected by the control unit that sets the parameter of the terminal block to the correct safety fuction, in this case E9 = ob **LIMIT SWITCH OPENING MOTOR B**. This feature is called **AUTO-ENABLE.**

The standard setting of inputs is negative common E0 = 02. To set the inputs with positive common, change to E0 = 01.

E1 N.O.		E2 N.O.		E3 N.C.		E4 N.C.		E5 N.C.	
n	DISABLED	n	DISABLED	n	DISABLED	n	DISABLED	n	DISABLED
Go	START	Go	START	St	(*) STOP	tc	(*) CLOSING PHOTOCELL MODE 1	tA	(*) OPENING PHOTOCELL
PE	PEDESTRIAN	PE	PEDESTRIAN					tc	CLOSING PHOTOCELL MODE 1
oP	OPEN	oP	OPEN			td	CLOSING PHOTOCELL MODE 2		
cL	CLOSE	cL	CLOSE						
Po	OPEN DEAD MAN	Po	OPEN DEAD MAN						
Pc	CLOSE DEAD MAN	Pc	CLOSE DEAD MAN						
EL	ELECTRIC LOCK	EL	ELECTRIC LOCK						

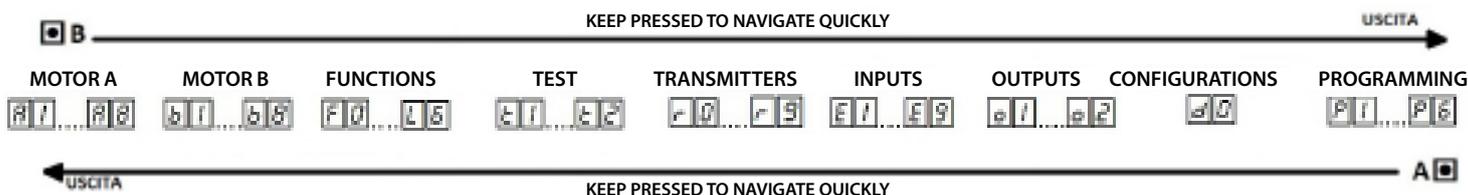| E6 N.C.		E7 N.C.		E8 N.C.		E9 N.C.	
n	DISABLED	n	DISABLED	n	DISABLED	n	DISABLED
Ao	(*) LIMIT SWITCH OPENING MOTOR A	Ac	(*) LIMIT SWITCH CLOSING MOTOR A	ob	(*) LIMIT SWITCH OPENING MOTOR B	ob	(*) LIMIT SWITCH OPENING MOTOR B

N.O. = NORMALLY OPEN
N.C. = NORMALLY CLOSED

STANDARD TERMINAL BLOCKS CONFIGURATION OR WHEN RESTORED TO FACTORY SETTINGS

* N.C. inputs are disabled, as standard configuration: E3 = E4 = E5 = E6 = E7 = n.

When the inputs are connected, the control unit automatically sets them to the correct safety function.

MENU NAVIGATION

	MOTOR A	MOTOR B	FUNCTIONS	TEST	TRANSMITTERS	INPUTS	OUTPUTS	CONFIGURATIONS	PROGRAMMING

KEEP PRESSED TO NAVIGATE QUICKLY

KEEP PRESSED TO NAVIGATE QUICKLY

To select a parameter from the menu, use the arrows (←) (→). With KEY (←) you navigate the menu in one direction, while with KEY (→) in the opposite direction. Once you reached the desired parameter, the value will appear on the display. To edit the value of the chosen parameter, use KEY (+) or KEY (-), depending on the value you need to set. The new values are automatically SAVED when exiting the menu. To exit the menu press KEY (←) or (→) until the display shows − −. By keeping the key pressed, it is possible to exit the menu quickly.

USEFUL TIPS

1. If the parameter you need to edit is at the end of the list, you can use the KEY (←) to reach it faster, by moving in the opposite direction. To select a parameter that is at the beginning of the list, it is better to use KEY (→).
2. Keep the key pressed to move quickly through the parameters list.
3. To exit the menu, keep the KEYS (←) and (→) pressed until − − appears on the display.
4. All the values are automatically saved when exiting the menu. If no key is pressed for 60 seconds, the control unit automatically exits the menu and saves the parameters. If you are not sure of the changes made, switch off the control unit without exiting the menu: the changes made in this session will not be saved.
5. When you are not navigating through the menu, the display shows the operating function. If multiple fuction are active, the one with the higher priority is shown.
6. If new values have been saved, it is always possible to restore the standard configuration: this operation does NOT delete the previously saved transmitters (see "**STANDARD CONFIGURATIONS**").

EXAMPLES

Example 1: add 1 second to the STANDARD WORKING TIME - MOTOR A

We consider that the control unit has the standard configuration STAND BY − −.
1) Press KEY (→)
2) A1 appears on the display --> this value is the STANDARD TIME, motor A
3) After 2 seconds, the control unit shows the value on the display - for example 14 seconds
4) Press KEY (+), the display will show 15
5) Press KEY (←) to exit the menu and save the set parameter A1 = 15 seconds

Example 2: disable auto-closure

1) Select AUTO-CLOSE TIME F0 using KEY (←) or (→). By keeping the arrows pressed it's possible to navigate the menu faster.
2) After 2 seconds, the control unit shows the value (F0) on the display - for example 10 seconds
3) Keep KEY (+) pressed. The value will quickly increase, then St will appear on the display: now, AUTO-CLOSE function is disabled and the gate will be open until the end of the opening movement (St means STOP an the end of the opening movement).
4) Press KEY (←) or (→) repeatedly/keep them pressed to exit the menu and save the set parameter, until − − appears on the display.

EXAMPLE 3: restore standard configuration

1) Select d0 using KEY (←) or (→). By using (symbol) you will easily reach d0 (it is one of the last parameters in the list).
2) After 2 seconds (→) will appear on the display.
3) Keep KEY (+) pressed: the display will blink showing Y.
   2 seconds later, − − will appear on the display: deafult settings have been restored. The control unit automatically exits the menu. Now, you can release KEY (+).

GUIDED CONFIGURATION

In this section it is possible to set the motor working time or the obstacle detector threshold. These procedures can be identified by letter P: it is always possible to manually change the values at the end of the programming.

BEFORE STARTING:

- Check the gate: it must be fully closed
- Check that the motor rotation is correctly performed: both motors must open during the opening movement; both motors must close during the closing movement.
- Be sure to have a START device: for example a transmitted stored as (symbol) or a key-switch connected to **terminal block 9** with value E1 = Go (START).
- In order to program the control unit without the slowdown working time, set: A2 or b2 = 0.0 and then proceed with programming.

During the configuration phase, on the display you will se the parameter you are setting, for example, if the display shows A1 it means that the control unit is setting parameter A1 (**STANDARD TIME - MOTOR A**).

STORE A TRANSMITTER AS START DEVICE

1. Select parameter r1 using key (←) or (→).
2. After a few seconds (=_) will appear on the display
3. Keep the button of the transmitter you want to store pressed: the display shows (=._)
4. Press KEY (+): the display shows (= 1). Your transmitter **has been successfully stored** in position 1 in the control unit's memory (display =2 means position 2 in the memory, display =3 means position 3, etc up to 99).
   4a. If the display shows (=.) your transmitter **has not been stored**.
   4b. If the display does not show (=.), the control unit **did not receiver** your transmitter (E.G.: different frequency compared to the receiver), or the radio receiver is faulty.

P1/P2	**GUIDED CONFIGURATION: 1/2 MOTOR/S**

P1: configuration 1 motor mode LS=Y, standard working time A1, motor A slowdown time A2 and auto-close time F0. To proceed with configuration P1 read lines A1, A2 and F0. If you disabled the slowdown time of the motor, skip A1 and/or b1.

P2: motor A and motor B standard time A1/b1, slowdown time A2/b2 and auto-close time F0 configuration. If you disabled the slowdown time of one of the motors or both, ignore A1 and/or b1.

_ _	After 2 seconds two dashes will appear on the display. Perform a **START** command to start A1 configuration.
A1	You are working on motor **A STANDARD TIME**. **Motor A** starts the opening movement. When the leaf controlled by motor A has completed 90% of the opening movement, send another **START** command. The control unit will automatically move to A2 configuration step
A2	You are working on **motor A SLOWDOWN TIME**. **Motor A** slows down. It is advisable to wait 2-3 seconds when the leaf has come to a completely open position and the motor ended the opening movement, then issue a new **START** command. The control unit will automatically move to b1 configuration step
b1	You are working on **motor B STANDARD TIME**. **Motor A** stops and **motor B** slows down. When the leaf controlled by **motor B** has completed 90% of the opening movement, send a **START** command. The control unit will automatically move to b2 configuration step
b2	You are working on **motor B SLOWDOWN TIME**. **Motor B** slows down. It is advisable to wait 2-3 seconds when the leaf has come to a completely open position and the motor ended the opening movement, then issue a new **START** command. The control unit will automatically move to F0 configuration step
F0	You are working on **AUTO-CLOSE TIME** F0. Both motors are idle. The display will show F0, then the seconds counting. Count the desired time you want your automation to wait before starting the auto-closure operation, then press the **START** command

> Guided configurations count the same time for opening and closing movements.

> If a leaf perform the SLOWDOWN operation only during opening movement (and not during the closing movement) follow this procedure:

  - Select A1 using keys (←) or (→)
  - Decrease A1 value by 1 second using key (-)
  - Select A2 using keys (←) or (→)
  - Increase A2 value by 3 seconds using key (+)
  - Perform a complete cycle

If the slowdown movement is performed, your configuration has come to an end. If not, repeat this procedure. Use the same procedure for motor B, if needed.

OVERVIEW OF FUNCTIONS AND REPORTS

OPERATIONAL REPORTS	
Po	DEAD MAN OPENING
Pc	DEAD MAN CLOSING
St	STOP
Fh	PHOTOCELL OP + CL
tc	CLOSING PHOTOCELL MODE 1
td	CLOSING PHOTOCELL MODE 2
tA	OPENING PHOTOCELL
Ih	LIMIT SWITCH ERROR BOTH MOTORS
EA	LIMIT SWITCH ERROR MOTOR A
Eb	LIMIT SWITCH ERROR MOTOR B
Go	START
PE	PEDESTRIAN
oP	OPEN
cL	CLOSE
EL	ELECTRIC LOCK
do	ACTIVATE OUTPUT
It	PHOTOCELLS TEST ERROR
7A	OBSTACLE DETECTION MOTOR A
7b	OBSTACLE DETECTION MOTOR B
9A	TEST ERROR MOTOR A
9b	TEST ERROR MOTOR B
9P	SENSOR PROGRAMMING ERROR
Ab	LIMIT SWITCH MOT.A + LIMIT SWITCH MOTOR B
Ao	OPENING LIMIT SWITCH MOTOR A
Ac	CLOSING LIMIT SWITCH MOTOR A
ob	OPENING LIMIT SWITCH MOTOR B
oc	CLOSING LIMIT SWITCH MOTOR B
--	STAND BY

A	MOTOR A
A1	STANDARD TIME
A2	SLOWDOWN TIME
A3	START TIME
A4	WAITING TIME BEFORE CLOSING
A5	STANDARD MOTOR FORCE
A6	SLOWDOWN MOTOR FORCE
A7	STANDARD OBSTACLE THRESHOLD
A8	SLOWDOWN OBSTACLE THRESHOLD

b	MOTOR B
b1	STANDARD TIME
b2	SLOWDOWN TIME
b3	START TIME
b4	WAITING TIME BEFORE CLOSING
b5	STANDARD MOTOR FORCE
b6	SLOWDOWN MOTOR FORCE
b7	STANDARD OBSTACLE THRESHOLD
b8	SLOWDOWN OBSTACLE THRESHOLD

t	TESTS
t1	PHOTOCELLS TEST
t2	MOTORS TEST

d	FACTORY SETTINGS
d0	RESTORING INITIAL VALUES

F/L	GENERAL FUNCTIONS
F0	AUTO-CLOSE TIME
F1	PEDESTRIAN TIME
F2	KICK BACK FUNCTION AT CLOSING
F3	PRE-BLINKING TIME
F4	KICK BACK FUNCTION AT OPENING
F5	STEP BY STEP
F6	MULTIPLE RESIDENTS
F7	FAST CLOSURE ON ALL CONTROLS
F8	PHOTOCELLS LOGIC: SLIDING
L0	ELECTRIC LOCK - FLASHING LIGHT
L1	MOTOR OIL RECIRCULATION
L3	ONLY MOTOR A MODE
L4	RESTORING MANOEUVRE WITH DEAD MAN FUNCTION
L5	WORKING CYCLES ASSISTANCE REQUEST
L6	TOTAL WORKING CYCLES COUNTER

r	RADIO
r0	GATE CODE
r1	START
r2	STOP
r3	PEDESTRIAN
r4	FAST CLOSURE
r5	DELETE ALL CODES
r6	PROGRAMMABLE FUNCTION
r7	PROGRAMMABLE FUNCTION
r9	PLUG-IN RADIO MODULE FUNCTION

E	TERMINAL BLOCK FUNCTIONS
E0	NEGATIVE-POSITIVE INPUT REFERENCE
E1	TERMINAL BLOCK INPUT 9
E2	TERMINAL BLOCK INPUT 10
E3	TERMINAL BLOCK INPUT 11
E4	TERMINAL BLOCK INPUT 12
E5	TERMINAL BLOCK INPUT 13
E6	TERMINAL BLOCK INPUT 22
E7	TERMINAL BLOCK INPUT 23
E8	TERMINAL BLOCK INPUT 24
E9	TERMINAL BLOCK INPUT 25

P	GUIDED PROGRAMMING
P1	GUIDED PROGRAMMING 1 MOTOR
P2	GUIDED PROGRAMMING 2 MOTORS
P6	OBSTACLE SENSOR PROGRAMMING

o	PROGRAMMABLE OUTPUTS
o1	RELAY MODULE FUNCTION PLUG-IN 1
o2	RELAY MODULE FUNCTION PLUG-IN 2

KEYS	
←	RUN FROM P6 TO A1
→	RUN FROM A1 TO P6
+	INCREASE / ENABLE
-	INCREASE / ENABLE

By holding the button down it is possible to scroll/increase/decrease quickly

FACTORY SETTINGS

The procedures that restore the factory settings can be identified on the menu by the letter **d**.

d0   RESTORATION OF INITIAL PARAMETER SETTINGS

This procedure **DOES NOT DELETE** previously saved remote controls from the memory. To restore the initial settings:
1. Select the parameter **d0** using the keys (←) or (→).
2. After 2 seconds the symbol **n** will appear on the display.
3. Keep the (**+**) KEY pressed down: the display will flash showing **Y**
4. After about 2 seconds the control unit shows **- -**: the factory values have been restored and the control unit will automatically exit from the menu. Now, you can release the (**+**) KEY.

INITIAL SETTING VALUES

MOTOR A			description
A1	14	sec	STANDARD TIME
A2	7	sec	SLOWDOWN TIME
A3	0,8	sec	START TIME
A4	0,6	sec	WAITING TIME BEFORE CLOSING
A5	0,8	%	STANDARD MOTOR FORCE
A6	10	%	SLOWDOWN MOTOR FORCE
A7	n	%	STANDARD OBSTACLE THRESHOLD
A8	n	%	SLOWDOWN OBSTACLE THRESHOLD

MOTOR B			description
b1	14	sec	STANDARD TIME
b2	7	sec	SLOWDOWN TIME
b3	0,8	sec	START TIME
b4	0,3	sec	WAITING TIME BEFORE OPENING
b5	0,8	%	STANDARD MOTOR FORCE
b6	10	%	SLOWDOWN MOTOR FORCE
b7	n	%	STANDARD OBSTACLE THRESHOLD
b8	n	%	SLOWDOWN OBSTACLE THRESHOLD

FUNCTIONS			description
F0	10	sec	AUTO-CLOSE TIME
F1	6	sec	PEDESTRIAN TIME
F2	n	y/n	KICK BACK FUNCTION AT CLOSING
F3	1	sec	PRE-BLINKING TIME
F4	n	y/n	KICK BACK FUNCTION AT OPENING
F5	n	y/n	STEP BY STEP
F6	n	y/n	MULTIPLE RESIDENTS
F7	n	y/n	EXTENDED FAST CLOSURE
F8	n	y/n	PHOTOCELLS LOGIC: SLIDING
L0	0	0,1,2,3	ELECTRIC LOCK

FUNCTIONS			description
L1	0	min	MOTOR HEATING / OIL RECYCLING
L3	n	y/n	1 MOTOR MODE
L4	n	y/n	RESTORING MANOEUVRE WITH DEAD MAN FUNCTION
L5	n	y/n	PERIODIC ASSISTANCE

TESTS			description
t1	n	y/n	PHOTOCELLS TEST
t3	Y	y/n	MOTORS TEST

RADIO		description
r6	PO	DEAD MAN OPENING
r7	Pc	DEAD MAN CLOSING
r9	Go	PLUG-IN RADIO - START FUNCTION

INPUTS		description
E0	2	NEGATIVE INPUT REFERENCE
E1	Go	TERMINAL 9 - START FUNCTION
E2	PE	TERMINAL 10 - PEDESTRIAN FUNCTION
E3	n	TERMINAL 11 – DISABLED
E4	n	TERMINAL 12 – DISABLED
E5	n	TERMINAL 13 – DISABLED
E6	n	TERMINAL 22 – DISABLED
E7	n	TERMINAL 23 – DISABLED
E8	n	TERMINAL 24 – DISABLED
E9	n	TERMINAL 25 – DISABLED

PARAMETERS NOT DESCRIBED ON THIS PAGE ARE LINKED TO PROCEDURES AND THEREFORE DO NOT HAVE AN INITIAL VALUE.

OPERATIONAL REPORTS AND PRIORITIES

When you are not navigating through the menu, the display shows the operating function. If multiple functions are active, the one with the higher priority is shown. For example, **input 9** on the terminal block is associated with the function programmed on parameter $E1$. The value $E1$ in the initial configuration is $E1 = G0$ **START**. The **START** function is associated with a normally open contact; when the contact is closed, the control unit display shows $G0$, i.e. it indicates that an event has been generated that activates the **START** function. If shortly afterwards, a remote control button is pressed which has been stored with the function $r2$ STOP. The control unit display shows $5t$ **STOP**, because the **STOP** function has a higher priority than the **STOP** function.

The following table lists all the operational functions that the control unit is able to manage, starting with the highest priority and ending with the lowest.

DISPLAY	NAME	DESCRIPTION	CONTROL SOURCE			
			TERMINAL BLOCK		REMOTE CONTROL	
Po	DEAD MAN OPENING	When the **DEAD MAN OPENING** function is active, the gate is open even if the **STOP** and **PHOTOCELLS** functions are active. When the **DEAD MAN OPENING** function is no longer engaged, the gate stops.	$E1$ 9	$E2$ 10	$r6$	$r7$
Pc	DEAD MAN CLOSING	When the **DEAD MAN CLOSING** function is active, the gate is closed even if the **STOP** and **PHOTOCELLS** functions are active. When the **DEAD MAN CLOSING** function is no longer engaged, the gate stops.	$E1$ 9	$E2$ 10	$r6$	$r7$
$5t$	STOP	The **STOP** function is active. If the gate is moving, it will come to a stop.	$E3$ 11		$r2$	
$F5$	OPENING PHOTOCELL+ CLOSING PHOTOCELL	The **OPENING PHOTOCELL** and **CLOSING PHOTOCELL MODE 1** functions are active at the same time.	$E4$ 12	$E5$ 13		
tc	CLOSING PHOTOCELL MODE 1	The **CLOSING PHOTOCELL MODE 1** function reverses the movement during the closing phase and it has no effect during the opening phase. If the **CLOSING PHOTOCELL MODE 1** function is active and the gate is stopped, it will **NOT** be started in **OPEN** when a **START** order is received.	$E4$ 12	$E5$ 13		
td	CLOSING PHOTOCELL MODE 2	The **CLOSING PHOTOCELL MODE 2** function reverses the movement during the closing phase and it has no effect during the opening phase. If the **CLOSING PHOTOCELL MODE 2** function is active and the gate is stopped, it will be started in **OPEN** when a **START** order is received.	$E4$ 12			
tA	OPENING PHOTOCELL	The **OPENING PHOTOCELL** function reverses the movement during the closing phase suspends opening during the opening phase.	$E5$ 13			
$1h$	LIMIT SWITCH ERROR MOTOR A and MOTOR B	The **OPENING LIMIT SWITCH** and **CLOSING LIMIT SWITCH** functions of **motor A** and **motor B** are active simultaneously. **Motor A** and **motor B** will not be able to move when both opening or closing.	$E6$ 22 $E8$ 24	$E7$ 23 $E9$ 25		
EA	LIMIT SWITCH ERROR MOTOR A	The **OPENING LIMIT SWITCH** and **CLOSING LIMIT SWITCH** functions of **motor A** are active simultaneously. **Motor A** will not be able to move when both opening or closing.	$E6$ 22	$E7$ 23		
Eb	LIMIT SWITCH ERROR MOTOR A B	The **OPENING LIMIT SWITCH** and **CLOSING LIMIT SWITCH** functions of **motor B** are active simultaneously. **Motor B** will not be able to move when both opening or closing.	$E8$ 24	$E9$ 25		
Go	START	The **START** function can open and close the gate. Its operation also depends on the programming of the parameters made ($F5$ = step-by-step mode / $F6$ = multiple residents mode - see "**GENERAL FUNCTIONS**") and on the status of the other inputs.	$E1$ 9	$E2$ 10	$r1$	$r4$

OPERATIONAL REPORTS AND PRIORITIES

Code	Name	Description			
PE	PEDESTRIAN	The **PEDESTRIAN** function can open and close door A of the gate for the time $F1$ programmed. Its operation also depends on the programming of the parameters made ($F5$ = step-by-step mode / $F6$ = multiple residents mode - see "**GENERAL FUNCTIONS**") and on the status of the other inputs.	E1 **9** E2 **10**	r3	
oP	OPEN	The **OPEN** function always starts the gate by opening depending on the status of the photocells, stop and limit switches.	E1 **9** E2 **10**	r6 r7	
cL	CLOSE	The **CLOSE** function always starts the gate by closing depending on the status of the photocells, stop and limit switches.	E1 **9** E2 **10**	r6 r7	
EL	ELECTRIC LOCK	The **ELECTRIC LOCK** function activates the electric lock for 3 seconds. The parameter LO must be set to the following values $LO = 00$ or $LO = 01$.		r6 r7	
do	ACTIVATE OUTPUT	The **ACTIVATE OUTPUT** function starts the function connected to the programmable outputs $o1$ and $o2$. The output functions must be connected to the correct source (see **PROGRAMMABLE OUTPUTS**).		r6 r7	
9P	AUTOMATIC PROGRAMMING ERROR	This error is reported after automatic programming of **SENSOR** $P6$. Error $9P$ indicates that one or more parameters related to the obstacle sensor have not been calibrated. To check which parameters are not programmed, check the value of the following parameters $P6, P7, b7$ and $b8$ (see "**CONFIGURATION MOTOR A/B**"). The parameters set to n have not been programmed.			
Ab	LIMIT SWITCH MOTOR A + LIMIT SWITCH MOTOR B	The function **LIMIT SWITCH MOTOR A** when opening or closing is active at the same time as the function **LIMIT SWITCH MOTOR B** when opening or closing. If the gate is fully closed and both closing limit switches (**motor A** and **motor B**) are installed, the display will show Ab subject to the priority of other events.	E6 **22** E7 **23** E8 **24** E9 **25**		
Ao	OPENING LIMIT SWITCH MOTOR A	The function **OPENING LIMIT SWITCH OF MOTOR A** is active: it ends the stroke of **motor A** when opening.	E6 **22**		
Ac	CLOSING LIMIT SWITCH MOTOR A	The function **CLOSING LIMIT SWITCH OF MOTOR A** ends the stroke of **motor A** when closing.	E7 **23**		
o2	OPENING LIMIT SWITCH MOTOR B	The function **OPENING LIMIT SWITCH OF MOTOR B** is active: it ends the stroke of **motor B** when opening.	E8 **24**		
oc	CLOSING LIMIT SWITCH MOTOR B	The function **CLOSING LIMIT SWITCH OF MOTOR B** ends the stroke of **motor B** when closing.	E9 **25**		
--	STAND BY	No function is active, no event is detected			

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MOTOR A SETTINGS

Motor A can be configured using 8 parameters identified by the letter A.

sec = seconds   **%** = percentage parameter   ***n*** = disabled

Times are expressed in seconds
Forces and thresholds are expressed in decimals and correspond to %. Ex: 01 = 10%

A1	STANDARD TIME	14 sec	A5	STANDARD FORCE (from 10% to 100%)	8/10 %
A2	SLOWDOWN TIME	7 sec	A6	SLOWDOWN FORCE (from 10% to 100%)	10/10 %
A3	SOFT START (ACHIEVING SET TORQUE)	0,8 sec	A7	STANDARD OBSTACLE DETECTION THRESHOLD	n %
A4	WAITING TIME BEFORE CLOSING	6 sec	A7	SLOWDOWN OBSTACLE DETECTION THRESHOLD	n %

A1	STANDARD TIME	MINIMUM: 0.0 sec	MAXIMUM: 99 sec

Motor A works for A1 seconds at force A5. At the end of this time, **motor A** slows down. This occurs during both opening and closing. **Motor A** opens before **motor B**. **Motor A** closes after A4 seconds with respect to **motor B**.

A2	SLOWDOWN TIME	MINIMUM: 0.0 sec	MAXIMUM: 99 sec

Motor A works for A2 seconds at force A6. The slowdown phase is performed after the normal working time for both opening and closing. To disable the slowdown of **motor A**, set the parameter A2 = 0.0 **sec**. Setting the slowdown to zero also means that programming P2 will be carried out without considering the slowdown phase of **motor A.**

A3	SOFT START (ACHIEVING SET TORQUE)	MINIMUM: 0.1 sec	MAXIMUM: 15 sec

When starting, **motor A** gradually increases the force until it reaches the set force A5. During this time the obstacle detection sensor is disabled.

A4	DELAY AT CLOSING (MOTOR A)	MINIMUM: 0.0 sec	MAXIMUM: b1+b2 sec

At the end of the opening phase and after the automatic closing time F0, **motor B** starts the closing phase. After A4 seconds, **motor A** also begins to close. This time is useful to avoid overlapping of the doors during the closing phase.

A5	TORQUE ADJUSTMENT/STANDARD FORCE	MINIMUM: 01 = 10%	MAXIMUM: 10 = 100%

During **STANDARD TIME** A1 the force of **motor A** is A5 % of the total. The force of **motor A** can be set **from 10% to 100%** in steps of **10%.** The force of the motor increases or decreases the sensitivity of the obstacle sensor: the greater the force set, the lower the sensitivity; the lower the force set, the higher the sensitivity.

A6	TORQUE ADJUSTMENT/STANDARD FORCE	MINIMUM: 01 = 10%	MAXIMUM: 10 = 100%

During **SLOWDOWN TIME** A2 the force of **motor A** is A6 % of the total. The **SLOWDOWN FORC**E can be set **from 10% to 100%** in steps of **10%.** The force of the motor increases or decreases the sensitivity of the obstacle sensor. The greater the force set, the lower the sensitivity. The lower the force, the greater the sensitivity.

A7	STANDARD OBSTACLE	MINIMUM: 00 = 0%	MAXIMUM: n = disabled

If the force of **motor A** detected is greater than the **STANDARD OBSTACLE THRESHOLD** A7 set, during **STANDARD TIME** A1 the control unit detects an obstacle. If the force of **motor A** detected is greater than the set threshold, the gate reverses the movement if it is the first detection in the working cycle, otherwise it goes to the limit switch.
Once the obstacle is detected, the gate performs a safety procedure by moving one door at a time.
In order to facilitate calibration of the **STANDARD OBSTACLE THRESHOLD**, the control unit's display during opening shows the force of **motor A** as a number from 00 to 99. To disable obstacle detection press the **(+) KEY** until the display shows n.

A8	SLOWDOWN OBSTACLE THRESHOLD	MINIMUM: 00 = 0%	MAXIMUM: n = disabled

During the **SLOWDOWN TIME** A2 the control unit detects an obstacle if the force of the motor is greater than the **SLOWDOWN OBSTACLE THRESHOLD** A8 set. Obstacle detection during slowdown acts as a limit switch. In order to facilitate calibration during **OPENING**, the display of the control unit shows the force of **motor A** as a number from 00 to 99. To disable obstacle detection during slowdown press the **(+) KEY** until the display does not show n.

MOTOR B SETTINGS

Motor B can be configured using 8 parameters identified by the letter ᗷ.

sec = seconds **%** = percentage parameter ***n*** = disabled

Times are expressed in seconds
Forces and thresholds are expressed in decimals and correspond to %. Ex: ☐| = 10%

ᗷ	**STANDARD TIME**	*14 sec*	
ᗷᒿ **SLOWDOWN TIME**	*7 sec*		
ᗷᗱ **SOFT START (ACHIEVING SET TORQUE)**	*0,8 sec*		
ᗷᔼ **WAITING TIME BEFORE CLOSING**	*6 sec*		

ᗷᔓ **STANDARD FORCE (from 10% to 100%)**	*8/10 %*	
ᗷᔔ **SLOWDOWN FORCE (from 10% to 100%)**	*10/10 %*	
ᗷᔕ **STANDARD OBSTACLE DETECTION THRESHOLD**	*n %*	
ᗷᔕ **SLOWDOWN OBSTACLE DETECTION THRESHOLD**	*n %*	

ᗷ| **STANDARD TIME**   MINIMUM: **☐.☐ sec**   MAXIMUM: **99 sec**

Motor B works for ᗷ| seconds at force ᗷᔓ. At the end of this time, **motor B** slows down. This occurs during both opening and closing. **Motor B** closes before **motor A**. **Motor B** opens ᗷᔼ seconds after **motor A**.

ᗷᒿ **SLOWDOWN TIME**   MINIMUM: **☐.☐ sec**   MAXIMUM: **99 sec**

Motor B slows down for ᗷᒿ seconds at force ᗷᔔ. The slowdown phase is performed after the normal working time for both opening and closing. To disable the slowdown of **motor B**, set the parameter ᗷᒿ = **☐.☐** sec.

ᗷᗱ **SOFT START (ACHIEVING SET TORQUE)**   MINIMUM: **☐.| sec**   MAXIMUM: **|5 sec**

When starting, **motor B** gradually increases the force until it reaches the set force ᗷᔓ. During this time the obstacle detection sensor is disabled.

ᗷᔼ **DELAY AT CLOSING (MOTOR B)**   MINIMUM: **☐.☐ sec**   MAXIMUM: **ᗩ|+ᗩᒿ sec**

Motor B opens ᗷᔼ seconds after **motor A**. This time is useful to avoid overlapping of the doors during the opening phase.

ᗷᔓ **TORQUE ADJUSTMENT/STANDARD FORCE**   MINIMUM: **☐| = 10%**   MAXIMUM: **|☐ = 100%**

During **STANDARD TIME** ᗷ| the force of **motor B** is ᗷᔓ % of the total. The force of **motor B** can be set **from 10% to 100%** in steps of **10%**. The force of the motor increases or decreases the sensitivity of the obstacle sensor. The greater the force set, the lower the sensitivity. The lower the force, the greater the sensitivity.

ᗷᔔ **TORQUE ADJUSTMENT/STANDARD FORCE**   MINIMUM: **☐| = 10%**   MAXIMUM: **|☐ = 100%**

During **SLOWDOWN TIME** ᗷᒿ the force of the motor is ᗷᔔ % of the total. The **SLOWDOWN FORCE** can be set **from 10% to 100%** in steps of **10%**. The force of the motor increases or decreases the sensitivity of the obstacle sensor: the greater the force set, the lower the sensitivity; the lower the force set, the higher the sensitivity.

ᗷᔕ **STANDARD OBSTACLE**   MINIMUM: **☐☐ = 0%**   MAXIMUM: **n = disabled**

If the force of **motor B** detected is greater than the **STANDARD OBSTACLE THRESHOLD** ᗷᔕ set during **STANDARD TIME** ᗷ| the control unit detects an obstacle. If the force of **motor B** detected is greater than the set threshold, the gate reverses the movement if it is the first detection in the working cycle, otherwise it goes to the limit switch. Once the obstacle is detected, the gate performs a safety procedure by moving one door at a time.
In order to facilitate calibration of the **STANDARD OBSTACLE THRESHOLD**, the control unit's display during **CLOSING** shows the force of **motor B** as a number from **☐☐** to **99**. To **disable** obstacle detection press the **(+) KEY** until the display shows **n**.

ᗷᔖ **SLOWDOWN OBSTACLE THRESHOLD**   MINIMUM: **☐☐ = 0%**   MAXIMUM: **n = disabled**

During the **SLOWDOWN TIME** ᗷᒿ the control unit detects an obstacle if the force of the motor is greater than the **SLOWDOWN OBSTACLE THRESHOLD** ᗷᔖ set. Obstacle detection during slowdown acts as a limit switch.
In order to facilitate calibration of the **SLOWDOWN OBSTACLE THRESHOLD**, the control unit's display during **CLOSING** shows the force of **motor B** as a number from **☐☐** to **99**. To **disable** obstacle detection during slowdown press the (+) KEY until the display does not show **n**.

OBSTACLE SENSOR PROGRAMMING

P6	AUTOMATIC OBSTACLE SENSOR PROGRAMMING

This procedure allows the obstacle sensor parameters of **motor A** and **motor B** to be programmed.

The parameters in question are:

A7 → **STANDARD OBSTACLE THRESHOLD MOTOR A**   A8 → **SLOWDOWN OBSTACLE THRESHOLD MOTOR A**

b7 → **STANDARD OBSTACLE THRESHOLD MOTOR B**   b8 → **SLOWDOWN OBSTACLE THRESHOLD MOTOR B**

P6	Select the automatic sensor programming using the (←) (→) **KEYS**.
- -	After a few seconds the display shows two underscores: send a **START** order to start the procedure.
1	The display shows 1: the motors close by pushing on the stop. The control unit is detecting the force of the motor in the presence of obstacles in both STANDARD and SLOW-DOWN modes. *The control unit automatically switches to step 2.*
2	The display shows 2: **motor A** opens and then slows down. When **motor A** stops, **motor B** opens and then slows down. The control unit is detecting the force of the motors in the absence of obstacles. *The control unit automatically switches to step 3.*
3	The display shows 3: the motors close first **motor B** and then **motor A** in turn. The control unit is resetting to the start position (GATE COMPLETELY CLOSED).

At the end of the procedure, if the control unit shows 9P , the programming was not successful on some or all of the parameters. To check parameters that have not been programmed, select in turn the parameters affected by programming and check their value. If they are set to n , that parameter has not been programmed. Changing the force of the motor may change the programming result.

Example:

When programming is complete, the display shows 9P. Suppose that the normal force of **motor B** has not been programmed. The numbers given in the example are for illustration purposes only and may vary from installation to installation.

• At the end of procedure P6 the control unit shows 9P

• Using **KEYS** (←) (→) select the parameter A7

• Parameter A7 = 47: the **STANDARD OBSTACLE THRESHOLD of motor A** has been correctly programmed.

• Using **KEYS** (←) (→) select the parameter A8

• Parameter A8 = 81: the **SLOWDOWN OBSTACLE THRESHOLD of motor A** has been correctly programmed.

• Using **KEYS** (←) (→) select the parameter b7

• Parameter b7 = n: the **STANDARD OBSTACLE THRESHOLD of motor B** has NOT been programmed.

• Using **KEYS** (←) (→) select the parameter b8

• Parameter b8 = 65 : the **SLOWDOWN OBSTACLE THRESHOLD of motor B** has been correctly programmed.

• At the end of this analysis, the only uncalibrated parameter was b7. Parameter b7 is linked to the normal phase of **motor B**. Therefore, by **modifying** the **NORMAL FORCE** of **motor B** b5 a repetition of the procedure can be attempted.

• Using **KEYS** (←) (→) select the parameter b5.

• Using the **(-) KEY** decrease the force of **motor B** by 1 or more units (each unit corresponds to 10%).

• Repeat this procedure P6.

• Repeat this operation until it is determined b7

The sensitivity of the obstacle sensor is determined by the FORCE setting rather than the detection threshold.

Generally, error 9P is linked to a force that is too high in relation to the gate in use. However, the procedure may also fail because the force setting is too low in relation to the system in use.

GENERAL FUNCTIONS

There are many functions that allow the operation of the gate to be customised. These are identified within the menu by the letters F and L.

sec = seconds   **%** = percentage parameter   **n** = disabled   **xxx** = see full description

Times are expressed in seconds
Forces and thresholds are expressed in decimals and correspond to %. Ex: 0 1 = 10%

F0	AUTO-CLOSE TIME	10 sec	F8	PHOTOCELLS LOGIC: SLIDING	n (y/n)
F1	PEDESTRIAN TIME	7 sec			
F2	KICK BACK FUNCTION AT CLOSING	0,0 sec	L0	ELECTRIC LOCK - FLASHING LIGHT 12VDC	0
F3	PRE-BLINKING TIME	1,0 sec	L1	MOTOR HEATING/OIL RECYCLING	0 min
F4	KICK BACK FUNCTION AT OPENING	n (y/n)	L3	ONLY MOTOR A MODE	n (y/n)
F5	STEP-BY-STEP MODE	n (y/n)	L4	RESTORING MANOEUVRE WITH DEAD MAN FUNCTION	n (y/n)
F6	MULTIPLE RESIDENTS MODE	n (y/n)	L5	WORKING CYCLES LIMIT - MAINTENANCE REQUEST	n
F7	FAST CLOSURE	n (y/n)	L6	TOTAL WORKING CYCLES COUNTER	xx

F0	AUTO-CLOSE TIME	MINIMUM: 0.0 sec	MAXIMUM: 99 sec

After opening, the gate remains fully open for F0 seconds. At the end of this time, the gate begins to close. To disable the **AUTOMATIC CLOSE TIME** keep the **(+) KEY** pressed down for a long time, until the display shows 5t. If automatic closing is disabled, the gate remains open after opening has finished.

F1	PEDESTRIAN TIME	MINIMUM: 0.0 sec	MAXIMUM: A1 sec

In the event that the gate is started by a **PEDESTRIAN** order, F1 represents the working time of **motor A**. The slowdown will not be performed during the opening phase, but will be performed during the closing phase. During a **PEDESTRIAN** operation, **motor B** is not activated. A **START** order interrupts the **PEDESTRIAN** operation and also starts **motor B**. During a standard working cycle, the **PEDESTRIAN** order behaves exactly like a **START** order.

F2	KICK BACK	MINIMUM: 0.0 sec	MAXIMUM: 25 sec

At the end of the closing process, after having performed any slowing down phase, **motor A** pushes on the stop at maximum force for F2 seconds. This function can be useful when using the electric lock, when closing is difficult. During this operation, the obstacle sensor is disabled

F3	PRE-BLINKING TIME	MINIMUM: 0.0 sec	MAXIMUM: 5.0 sec

Before starting an opening or closing operation, the gate waits for F3 seconds.

F4	KICK BACK	MINIMUM: n	MAXIMUM: y

By enabling parameter F5 = y before opening, **motor A** closes for 0.5 seconds. During this time the force of the motor is at its maximum and the obstacle sensor is disabled. This function can be useful to help release the electric lock.

F5	STEP-BY-STEP MODE	MINIMUM: n	MAXIMUM: y

Enabling parameter F5 = y activates the **STEP-BY-STEP** mode: during the opening and closing phase, the **START** orders stop the movement. A subsequent **START** order will start the movement in the opposite direction to the one that was interrupted.
For example: if the gate is opening, a **START** order stops the opening. The subsequent **START** order starts the closing phase of the gate.

F6	MULTIPLE RESIDENTS MODE	F5 = n	F6 = n

Enabling parameter F6 = y activates the **MULTIPLE RESIDENTS** mode: during the **OPENING** phase, the **START** orders do not block the operation. During the closing phase, the **START** orders reverse the movement (from **CLOSING (→) OPENING**). Multiple residents mode has higher priority than **STEP-BY-STEP** mode. By setting F6 = y it will no longer be possible to change the value of F5 which will be automatically disabled (n).

	STANDARD MODE	MINIMUM: 00 = 0%	MAXIMUM: n = disabled

If both **STEP-BY-STEP** and COMMUNITY modes are disabled (F5 = n, F6 = n) the operating logic of the control unit is **STANDARD**: during opening, the **START** orders stop the movement of the gate. During closing, the **START** orders reverse the movement.

GENERAL FUNCTIONS

F̄ꞁ	FAST CLOSURE	MINIMUM: ꞁ	MAXIMUM: ꓯ

The **FAST CLOSURE** function allows the gate to be closed after passing in front of both photocells (open and close or close and open). Closing begins 5 seconds after passing in front of the photocells. This function is only enabled once per **WORKING CYCLE** and if the gate movement is not interrupted.

If F̄ꞁ = all **START** orders initiate this function: the remote controls stored with the functions ꞁ **START**, ꞁꓱ **PEDESTRIAN**, ꞁꓯ **FAST CLOSURE**, the terminal board inputs associated with the **START** Lꞁ , **OPEN** ꝏᴾ or **PEDESTRIAN** functions ᴾⱸ. If F̄ꞁ = ꞁ (disabled) only remote controls stored with the radio function ꞁꓯ activate the **FAST CLOSURE**.

Fꓭ	PHOTOCELLS LOGIC: SLIDING	MINIMUM: ꞁ	MAXIMUM: ꓯ

If Fꓭꓱ = ꓯ the photocells operate with the logic of SWING GATE automation:
- **OPENING PHOTOCELLS** (terminal 13 parameter ⱸꓮ = ⱸꓮ): suspend the **OPENING** as long as the beam is interrupted. Reverses the movement status from **CLOSING** to **OPENING SUSPENDED**. During **OPENING** they have no effect on the ongoing operation.
- **CLOSING PHOTOCELLS** (terminal 12 parameter ⱸꓯ = ⱸꞓ ,ⱸꓯ = ⱸꓒ): reverse the movement from **CLOSING** to **OPENING**.

If Fꓭꓱ = ꞁ the photocells operate with the logic of **SLIDING** automation:
- **OPENING PHOTOCELLS** (terminal 13 parameter ⱸꓮ = ⱸꓮ): during **OPENING** they reverse the movement for 3 seconds. After these 3 seconds, **CLOSING** is interrupted. A subsequent **START** order starts the gate in **CLOSING** mode.
They have no effect during the **CLOSING** operation.
- **CLOSING PHOTOCELLS** (terminal 12 parameter ⱸꓯ = ⱸꞓ, ⱸꓯ = ⱸꓒ): reverse the movement from **CLOSING** to **OPENING**. They have no effect during the **OPENING** operation.

Lꞁ	KICK BACK	MINIMUM: ꞁ	MAXIMUM: ꓱ

This parameter allows changes to be made to the operating logic of terminals 20 + e 21 - (Lꞁꞁ) associated with the electric lock. This output is useful for controlling a 12VDC electric lock or a 3 W 12 VDC LED flashing light. The output of the electric lock can also be controlled by remote control.

Lꞁꞁꞁ = ꞁꞁ → The output is disabled. Only remote controls associated with the function ⱸL (activate the electric lock for 3 seconds) can activate the control unit's output 20 + e 21 - (Lꞁꞁꞁ). The activation of the electric lock by remote control can be useful to manage a pedestrian gate adjacent to the automatic gate.

Lꞁꞁꞁ = ꞁ ꞁ → The output is enabled to manage an electric lock installed on the door moved by motor A. At the beginning of each OPENING movement, the control unit releases the electric lock. Remote controls stored as ⱸL unlock the electric lock.

Lꞁꞁꞁ = ꞁꞁ2 → The output is enabled with an intermittent flashing function. During **OPENING**, the flashing light will perform fast flashes. During **CLOSING** the flashes will be slow. During the automatic closing time, the flashing light is permanently lit.

Lꞁꞁꞁ = ꞁꞁ3 → The output is enabled with the steady light function during the operation. During **OPENING**, **CLOSING** and the **AUTOMATIC CLOSING** TIME the flashing light is on.

Lꞁ	OIL RECYCLING / MOTOR HEATING	MINIMUM: ꞁ min	MAXIMUM: ꓭ min

With this function it is possible to heat the motors and the control unit box cyclically. In the case of systems with hydraulic motors, it is useful to circulate the oil periodically: each cycle lasts 10 minutes and Lꞁ represents the minutes that the motor/box is heated in each cycle. This function is activated after 10 minutes with the gate fully closed or open: any operation on the control unit or interruption of a photocell resets the time count to zero. The motors are active in the final part of each cycle. For example, by setting Lꞁ = ꞁꞁ3 the motors remain switched off for 7 minutes and then switched on for the remaining ꓱ minutes after the function is active (i.e. after 17 minutes from the last operation performed).

Lꓱ	ONLY MOTOR A MODE	MINIMUM: ꞁ	MAXIMUM: ꓯ

By enabling this function Lꓱ = ꓯ only motor A will be managed. The parameters relating to motor B (ꓭꞁ – ꓭꓭ) can no longer be modified. This function is useful when installing a 1 door swing gate or sliding gates. If this control unit is used on a sliding gate, set parameter Fꓭꓱ = ꓯ to select the correct photocell logic.

GENERAL FUNCTIONS

L4	RESTORING MANOEUVRE WITH DEAD MAN FUNCTION	MINIMUM: n	MAXIMUM: y

This function, if enabled, L4 = y allows the gate to be opened or closed if one of the safety devices (photocells or stop) breaks down, allowing passage until the fault is repaired. This mode requires the installation of a **START** device (normally open contact) on terminal block 9 or terminal block 10 and the setting of its management parameter (E1 or E2) to one of the following functions: Go start, oP open or cL close. If the conditions described above are met and a safety device (stop, external or internal photocell) has been active for more than 5 seconds, then it is possible to operate the gate in opening/closing mode using this procedure:

1. Activate the **START** device
2. Deactivate the **START** device

The flashing lights turn on (only if configured on terminals 20 + e 21 - (L0) via function L0 = 02 or L0 = 03).

3. Activate the **START** device within 2.5 seconds of the flashing light coming on. The control unit shows the countdown from 2.5 to 0 seconds on the display.
4. The gate will perform the required operation (opening/closing) as long as the **START** device is kept active. When the **START** device is deactivated, the control unit blocks the movement of the gate.

L5	WORKING CYCLES LIMIT - MAINTENANCE REQUEST	MINIMUM: n	MAXIMUM: 5.9

Parameter L5 allows the number of working cycles before maintenance to be set. When the gate has performed L5 operation, the time for flashing will be set to 5 seconds. This function can be useful for alerting the end user to the need for system maintenance. The parameter L5 can be set in these ranges:

n = disabled

- from 0.1 to 0.9 from 1 to 9 working cycles
- from 1.1 to 1.9 from 10 to 90 working cycles
- from 2.1 to 2.9 from 100 to 900 working cycles
- from 3.1 to 3.9 from 1000 to 9000 working cycles
- from 4.1 to 4.9 from 10000 to 90000 working cycles
- from 5.1 to 5.9 from 100 000 to 900 000 working cycles

> **How to read the display:**
> the first digit indicates the exponent of the power of 10, the second its multiplier.
> *For example:*
> 3.3 indicates 103 x 3 = 3,000
> 2.9 indicates 103 x 9 = 900
> 5.1 indicates 105 x 1 = 100,000

Pressing any key on the control unit sets the counter to 0 and this function will only be activated again after L5 cycles.

L6	WORKING CYCLES COUNTER	MINIMUM: 0.1	MAXIMUM: 6.9

Parameter L6 cannot be changed or deleted and represents the number of working cycles of the automatic gate. Once the parameter L6 has been selected (see the **MENU NAVIGATION** page) the most significant decimal number of the counter is shown in the format **POSITION, VALUE**. By pressing the **(-) KEY** the display switches off.
Once the **(-) KEY** is released the scanning of the counter begins displaying its decimal position (value to the left of the dot) and its value (to the right of the dot).

EXAMPLE:
if a gate has performed 6258 operations, once L6 has been selected the display shows: 3.6 by pressing the **(-) KEY** the display switches off. By releasing the **(-) KEY** the display will show in sequence:

multiplier:	*1000	*100	*10	*1	
position:	3	2	1	0	
	3.6	2.2	1.5	0.8	
value:	6	2	5	8	= 1000*6 + 100*2 + 10*5 + 1*8

The display changes screen to the next position approximately every 3 seconds, switching off briefly before showing the new number.

TESTS

Within the menu, test functions are identified by the letter t

$t1$ **PHOTOCELLS TEST** n (y/n) t **MOTORS TEST** n (y/n)

$t1$	PHOTOCELLS TEST	MINIMUM: n	MAXIMUM: y

Before enabling this function ($t1 = y$), check that the negative of the **PHOTOCELL TRANSMITTERS** is connected to **terminal 19 label t1**. Connect ONLY the negatives of the **TRANSMITTERS to terminal 19** and no other signals.

Before starting a closing or opening operation, the control unit removes power from the photocells checking that the contact is open. Once the opening of the contact has been checked, the control unit supplies the photocells again, checking the closure of the contact (the photocells are associated with signals type **N.C. NORMALLY CLOSED**).

If the check is successful, the required operation is started. If the check fails, the control unit display will indicate it and the gate will not be started. The photocell test will only be carried out on installed photocells.

For example: if the system only uses the photocell when closing, ensure that parameter $E4$ is set to tc or td (functions relating to the photocell) and that the parameter $E5$ is disabled ($E5$ = n - see "**GENERAL FUNCTIONS**").

In this way, the control unit will know which terminal the photocell is connected to and will not carry out the test on the unused terminal.

$t2$	MOTORS	MINIMUM: n	MAXIMUM: y

Before each operation, the control unit carries out the test of **motor A** and the test of **motor B**.

If the test is successful, the requested operation is started. If the test fails, the display shows:
- $9A$ **error motor A**
- $9b$ **error motor B**

The motor test fails in 4 cases:
- Motor **THERMAL CUTOFF TRIGGERED**
- **CONNECTION ERROR**
- Worn-out of the **COMPENSATION CAPACITOR** or breakdown of the control unit **TRIAC**.

REMOTE CONTROLS CONFIGURATION

This function is only available for the model WITH RADIO MODULE (APE-570/0510)

The remote controls can be configured using radio functions, which are identified on the display by the letter ⌐ .

⌐0 REMOTE CONTROL DELETION	⌐5 DELETE ALL REMOTE CONTROLS	P0 OPEN DEAD MAN
⌐1 START	⌐6 PROGRAMMABLE FUNCTION	Pc CLOSE DEAD MAN
⌐2 STOP	⌐7 PROGRAMMABLE FUNCTION	Go START
⌐3 PEDESTRIAN	⌐9 PLUG-IN RADIO MODULE	
⌐4 FAST CLOSURE		

⌐1 ⌐2 ⌐3 ⌐4 ⌐6 ⌐7   **STORE A REMOTE CONTROL**

Up to 99 remote controls can be stored on the control unit. The remote control code is stored in the control unit (not in the radio module). If a remote control is to be deleted in the future, it is advisable to make a note of the memory allocation number for each user.

To store a remote control, select one of the available functions:
⌐1 **START** , ⌐2 **STOP**, ⌐3 **PEDESTRIAN**, ⌐4 **FAST CLOSURE**, ⌐6 **PROGRAMMABLE FUNCTION** or ⌐7 **PROGRAMMABLE FUNCTION**

Having selected the function, after about 2 seconds, the display shows =_. Keep the **REMOTE CONTROL KEY** pressed down and simultaneously press the **(+) KEY** on the control unit. When a remote control is transmitting, the display indicates this by lighting up a dot on the display. Once the remote control has been memorised, the control unit displays its identification number in the ID memory (from 0 to 99). The identification code is useful for deleting the remote control using the function ⌐0. The remote control identification number is shown each time the stored remote control is transmitted and only after having selected one of the radio parameters ⌐1, ⌐2, ⌐3, ⌐4, ⌐6 or ⌐7. If the key on the remote control is pressed when the control unit is in **STAND BY** ‾ ‾ the message of the function with which it is associated is displayed.

SAVING A REMOTE CONTROL AS START
1. Select the parameter ⌐1 using the scroll keys (←) or (→).
2. After a few seconds the display shows = _.
3. Hold down the button on the remote control to be stored. The display shows = . _
4. Press the **(+) KEY** on the control unit. The display shows = 1. The remote control **has been successfully stored** in position 1 of the control unit memory (display = 2 memory position 2, display = 3 memory position 3, etc. up to 99).
    4a. If the display shows = . , the remote control has not been stored.
    4b. If the display doesn't show = . , the remote control was not received (e.g.: different frequency from the receiver), or the radio receiver is faulty.

⌐0   **DELETE A REMOTE CONTROL**

To delete a remote control it is necessary to know its ID (IDENTIFICATION number) or, vice versa, it is necessary to know the ID of the remote controls you do not want to delete. To find out the ID of a remote control, select one of the following radio parameters ⌐1, ⌐2, ⌐3, ⌐4, ⌐6 or ⌐7. Press the button on the remote control: the display will show its identification number.

To delete a remote control, select parameter ⌐0. After a few seconds, the display shows in sequence the identification numbers of the remote controls in the control unit's memory. Once the ID of the remote control that is to be deleted is displayed, press and hold the **(+) KEY** on the control unit. The display starts flashing and continues to show the ID number. Continue to hold down the **(+) KEY** until the display turns off (approx. 2 seconds). The remote control has been deleted.

EXAMPLE: DELETE THE REMOTE CONTROL WITH IDENTIFICATION NUMBER 3
1. Select the parameter ⌐0 using the scroll keys (←) or (→).
2. After 2 seconds the control unit shows =
3. After 2 seconds the control unit shows = 1
4. After 2 seconds the control unit shows = 2
5. After 2 seconds the control unit shows = 3
6. Press and hold down the **(+) KEY**
7. The display starts flashing showing = 3. Keep holding down the **(+) KEY**
8. After about 2 seconds the display turns off, the remote control has been deleted.

REMOTE CONTROLS CONFIGURATION

This function is only available for the model WITH RADIO MODULE (APE-570/0510)

| r5 | DELETE ALL REMOTE CONTROLS |

To delete all the remote controls, select the parameter r5.
After about 2 seconds, the control unit displays n. Hold down the **(+) KEY**. The display starts flashing showing Y.
When the display shows Y without flashing, then **ALL** previously stored remote controls have been **DELETED**.

| r6   r7 | PROGRAMMABLE FUNCTION |

The remote controls stored via the functions r6 and r7 can be associated with different functions:
Po **DEAD MAN OPENING**, Pc **DEAD MAN CLOSING**, oP **OPEN**, cL **CLOSE**, EL **ACTIVATE ELECTRIC LOCK** for 3 seconds, do **ACTI-VATE PROGRAMMABLE OUTPUT** (see parameters o1 and o2 in the section of the manual describing programmable outputs). To save a remote control that can be associated with a programmable function, proceed as described in the **STORE A REMOTE CONTROL** paragraph.
To **ASSOCIATE A NEW FUNCTION**, select parameter r6 or r7. Hold down the **(-) KEY**. The display starts flashing showing r6 or r7.
When it stops flashing, release the **(-) KEY**. Change the function using the **(+) KEY**.
The function initially associated with r6 is Po **DEAD MAN OPENING**. The function initially associated with r7 is Pc **DEAD MAN CLOSING**.

| r9 | PLUG-IN RADIO |

The "PLUG-IN RADIO MODULE" section is dedicated to both models (APE-570/0510 - APE-570/0511).

To store or delete a remote control on the plug-in radio module, refer to the manual provided by the manufacturer of the **RADIO**.
It is possible to change the function engaged by the remote controls stored on the plug-in radio module. To change the function of the radio, select parameter r9. After 2 seconds, the display shows the associated function. Use the **(+) KEY** or the **(-) KEY** to change the function.
Remote controls stored on the plug-in radio module can be associated with one of these functions:
n DISABLED, Go START, oP OPEN.

Remote controls stored on the plug-in radio module are not stored in the control unit memory.

PROGRAMMABLE OUTPUTS

The management parameters of the programmable outputs can be identified in the menu by the letter **o**.

In order to use these functions, **RELAY** expansion modules (*APE-570/0022*) need to be connected to the connection pins on the control unit:

Example: connection
of two 230 Vac lights
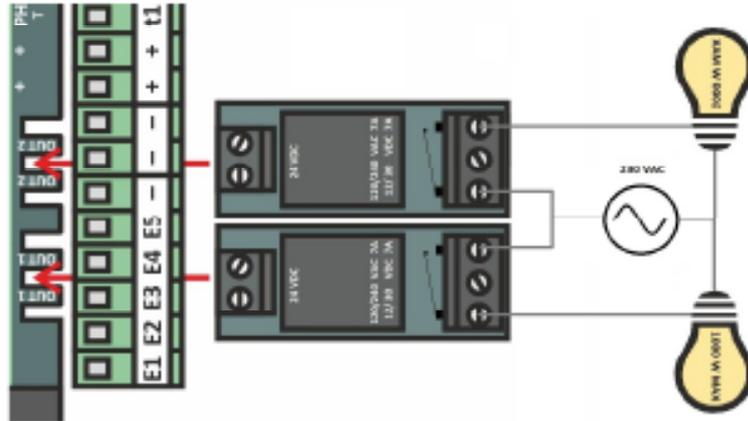
PROGRAMMABLE OUTPUTS 1

o1   o2

The programmable functions on the outputs are as follows:

o1: **GATE OPEN INDICATOR LIGHT**
The output is active when the gate is OPEN. As soon as the gate is **COMPLETELY CLOSED**, the output is deactivated.

o2: **GATE CLOSED INDICATOR LIGHT**
The output is active when the gate is **COMPLETELY CLOSED**. As soon as the gate is no longer closed it is deactivated.

o3: **INTERMITTENT FLASHING LIGHT**
The output is not active when the gate is stopped. The output is deactivated and activated intermittently when the gate is in motion. During opening it is deactivated and activated faster than during closing. During **AUTO-CLOSE TIME** (the gate is fully open and will close automatically after **F0** seconds) the output is active. With this function it is possible to use the flashing light both to distinguish the working phase of the gate and to signal the current or future operation of the automatic gate.

o4: **COURTESY LIGHT**
The output is activated for 3 minutes each time the gate starts an opening operation.

o5: **"ON/OFF" BY REMOTE CONTROL STORED AS r6**
The output status is switched whenever a remote control stored as r6 is transmitting. This function is useful for operating a light controlled by a remote control button.

o6: **"ON" WHILE A REMOTE REMOTE STORED AS r6 IS TRANSMITTING**
The output is active whenever a remote control stored as **r6** is transmitting. This function can be useful for controlling an electric lock through a radio device, or for signalling a dead man opening/closing movement.

o7: **"ON/OFF" BY REMOTE CONTROL STORED AS r7**
The output status is switched whenever a remote control stored as **r7** is transmitting. This function is useful for operating a light controlled by a remote control button.

o8: **"ON" WHILE A REMOTE REMOTE STORED AS r7 IS TRANSMITTING**
The output is active whenever a remote control stored as **r7** is transmitting. This function can be useful for controlling an electric lock through a radio device, or for signalling a dead man opening/closing movement.

PROGRAMMABLE OUTPUTS

ALL EXAMPLES ASSUME THAT THE PLUG-IN RELAY EXPANSION MODULE (APE 570/0022) HAS BEEN CONNECTED TO THE CONTROL UNIT'S OUTPUT PINS.

EXAMPLE: remote control configuration for controlling a light

1. Store a remote control as ┌ ᗺ.
2. Select the parameter ┌ ᗺ again.
3. Press and hold down the **(-) KEY** on the control unit. The display starts flashing showing ┌ ᗺ.
4. When the display shows ┌ ᗺ without flashing, release the **(-) KEY**.
5. Using the **(+)(-) KEYS**, select the ᗪᗝ function.
6. Using **(←) (→) KEYS** select the parameter ᗝ ¦ / ᗝᔍ.
7. Using the **(+)(-) KEYS**, select the ᗩᔕ function.
8. Exit the menu using the **(←) (→) KEYS**.

The remote control stored by performing this procedure will switch the output status without changing the gate status.

EXAMPLE: configure a remote control to signal a dead man opening movement

1. Store a remote control as ┌ ᗺ.
2. Select the parameter ┌ ᗺ again.
3. Press and hold down the **(-) KEY** on the control unit. The display starts flashing showing ┌ ᗺ.
4. When the display shows ┌ ᗺ without flashing, release the **(-) KEY**.
5. Using the **(+)(-) KEYS**, select the ᑭᗝ function.
6. Using **(←) (→) KEYS** select the parameter ᗝ ¦ / ᗝᔍ.
7. Using the **(+)(-) KEYS**, select the ᗩᗺ function.
8. Exit the menu using the ←) (→) **KEYS**.

When the remote control button, stored following the above procedure, is transmitting, the gate will move in the **OPEN** direction and simultaneously the output will be activated.

EXAMPLE: configure a remote control to signal a dead man closing movement

1. Store a remote control as ┌ ᑌ.
2. Select the parameter ┌ ᑌ again.
3. Press and hold down the **(-) KEY** on the control unit. The display starts flashing showing ┌ ᑌ.
4. When the display shows ┌ ᑌ without flashing, release the **(-) KEY**.
5. Using the **(+)(-) KEYS**, select the ᑭᑕ function.
6. Using **(←) (→) KEYS** select the parameter ᗝ ¦ / ᗝᔍ.
7. Using the **(+)(-) KEYS**, select the ᗝᗺ function.
8. Exit the menu using the **(←) (→) KEYS**

When the remote control button, stored following the above procedure, is transmitting, the gate will move in the **CLOSE** direction and simultaneously the output will be activated.

EXAMPLE: transforming a 230VAC light into a intermittent flashing light

1. Using **(←) (→) KEYS** select the parameter ᗝ ¦ / ᗝᔍ.
2. Using the **(+)(-) KEYS**, select the ᗝᔍ function.
3. Exit the menu using the **(←) (→) KEYS**

The lamp will turn on and off quickly during opening, slowly during closing and will remain on during the **AUTO-CLOSE TIME**.

PRODUCT DISPOSAL

A) Declaration for household EEE without batteries or portable accumulators

INFORMATION FOR USERS OF DOMESTIC OR PROFESSIONAL EQUIPMENT

Pursuant to Art. 26 of Italian Legislative Decree No. 49 of 14 March 2014 "Implementation of Directive 2012/19/EU on waste electrical and electronic equipment (WEEE)"

The crossed-out wheelie bin symbol on the equipment or its packaging indicates that the product must be collected separately from other waste at the end of its useful life to enable proper treatment and recycling. The user must, therefore, return the end-of-life equipment free of charge to the appropriate municipal centres for the separate collection of electrical and electronic waste, or return it to the retailer as follows:

- for very small appliances, i.e. with at least one external side not exceeding 25 cm, free delivery with no obligation to buy is provided by shops with a sales area for electrical and electronic equipment of more than 400 m². For smaller shops, this is optional.
- for appliances larger than 25 cm, delivery is provided to all points of sale on a 1-for-1 basis, i.e. delivery to the retailer can only take place on the purchase of a new equivalent product on a one-for-one basis.
  Appropriate separate collection for subsequent recycling, treatment and environmentally sound disposal of discarded equipment contributes to avoiding possible negative effects on the environment and health and promotes the reuse and/or recycling of the materials from which the equipment is made.

Unauthorised disposal of the product by the user will result in the application of sanctions in accordance with current legislation.

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AUTOMATION ACCESSORIES