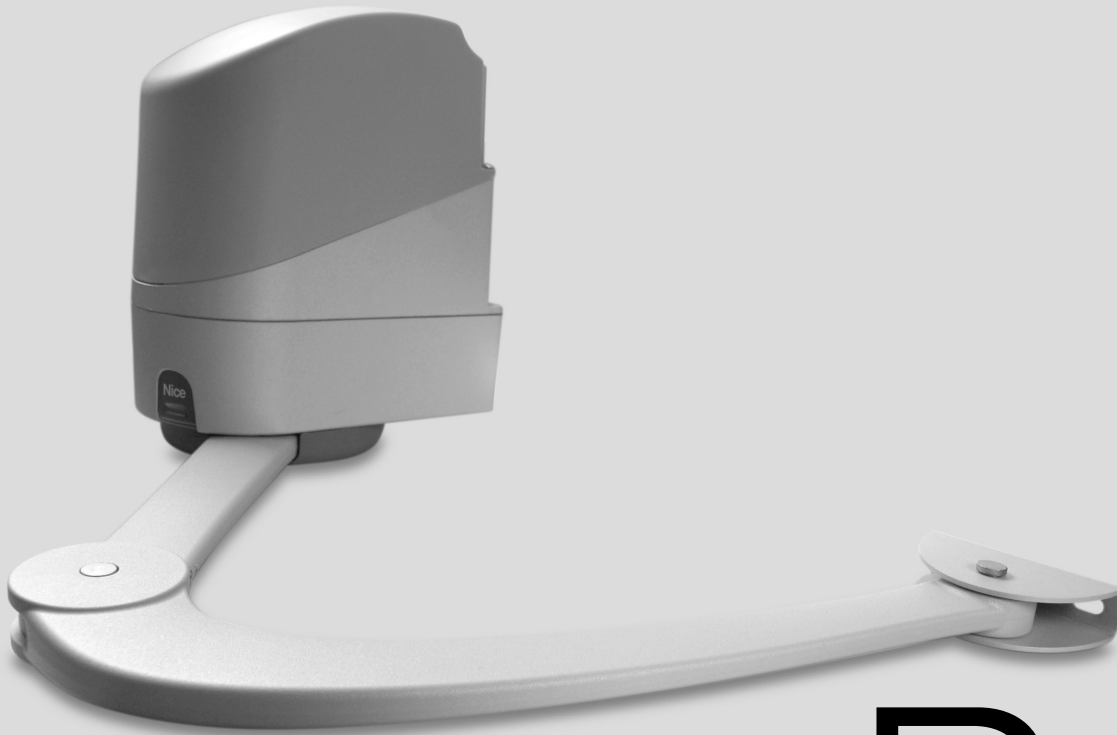


CE

For swing gates



Pop

Instructions and warnings for the fitter

Istruzioni e avvertenze per l'installatore

Instructions et recommandations pour l'installation

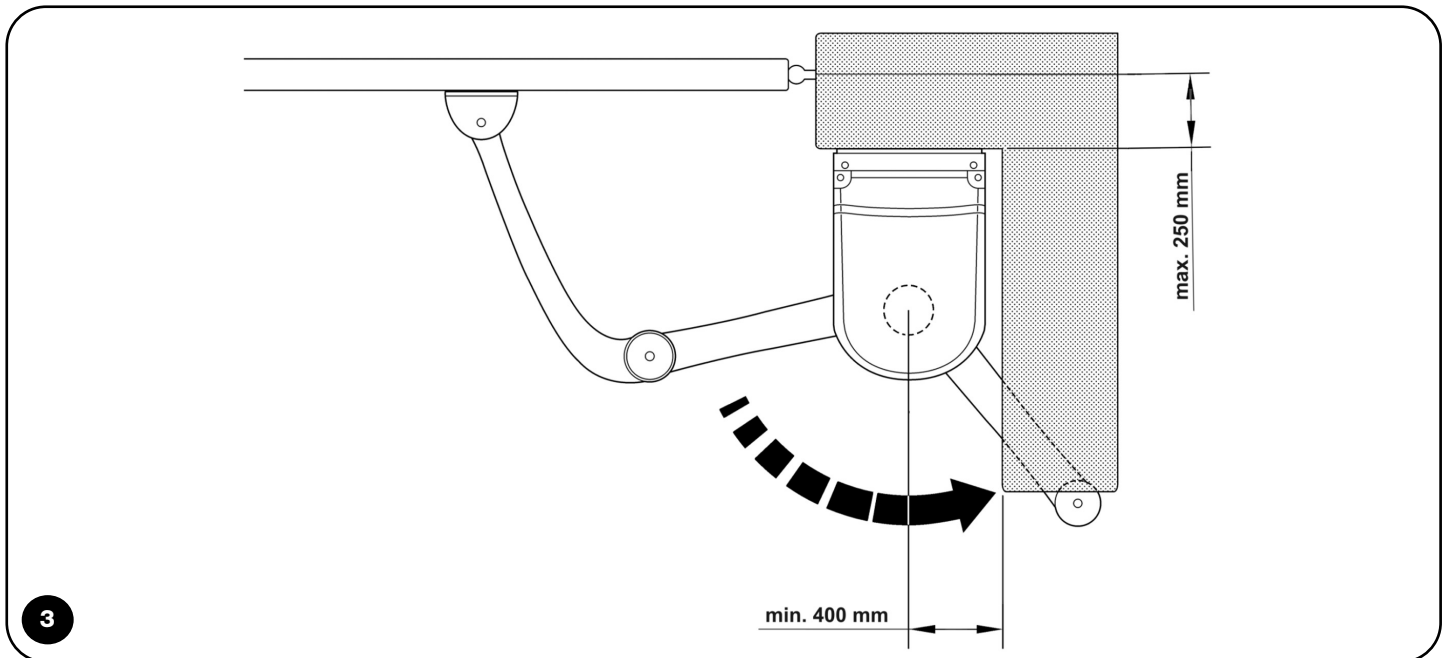
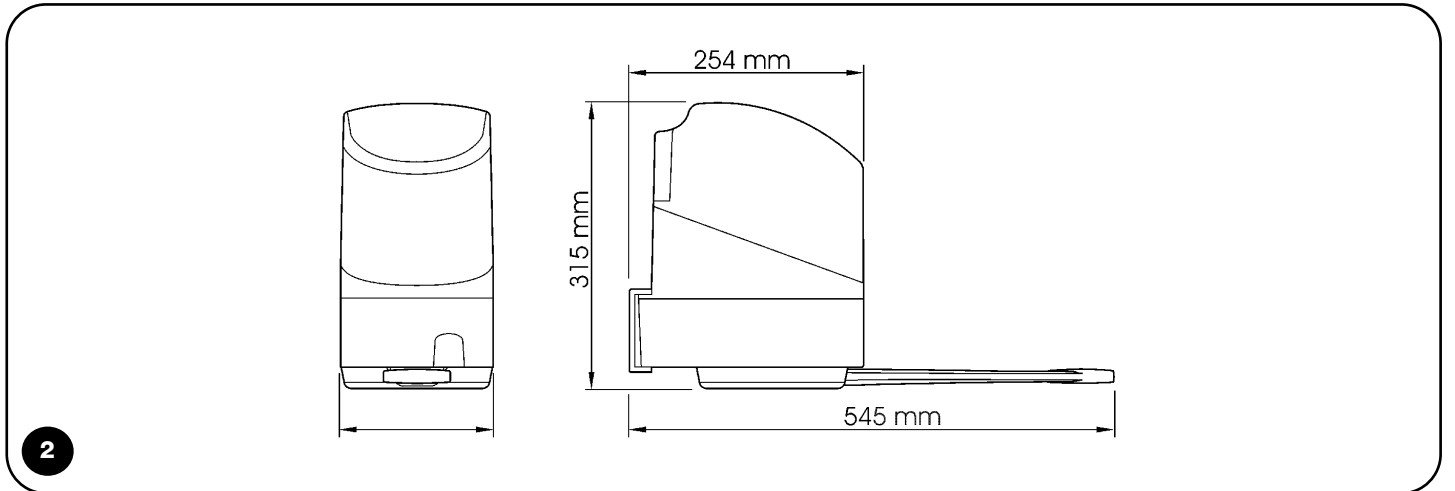
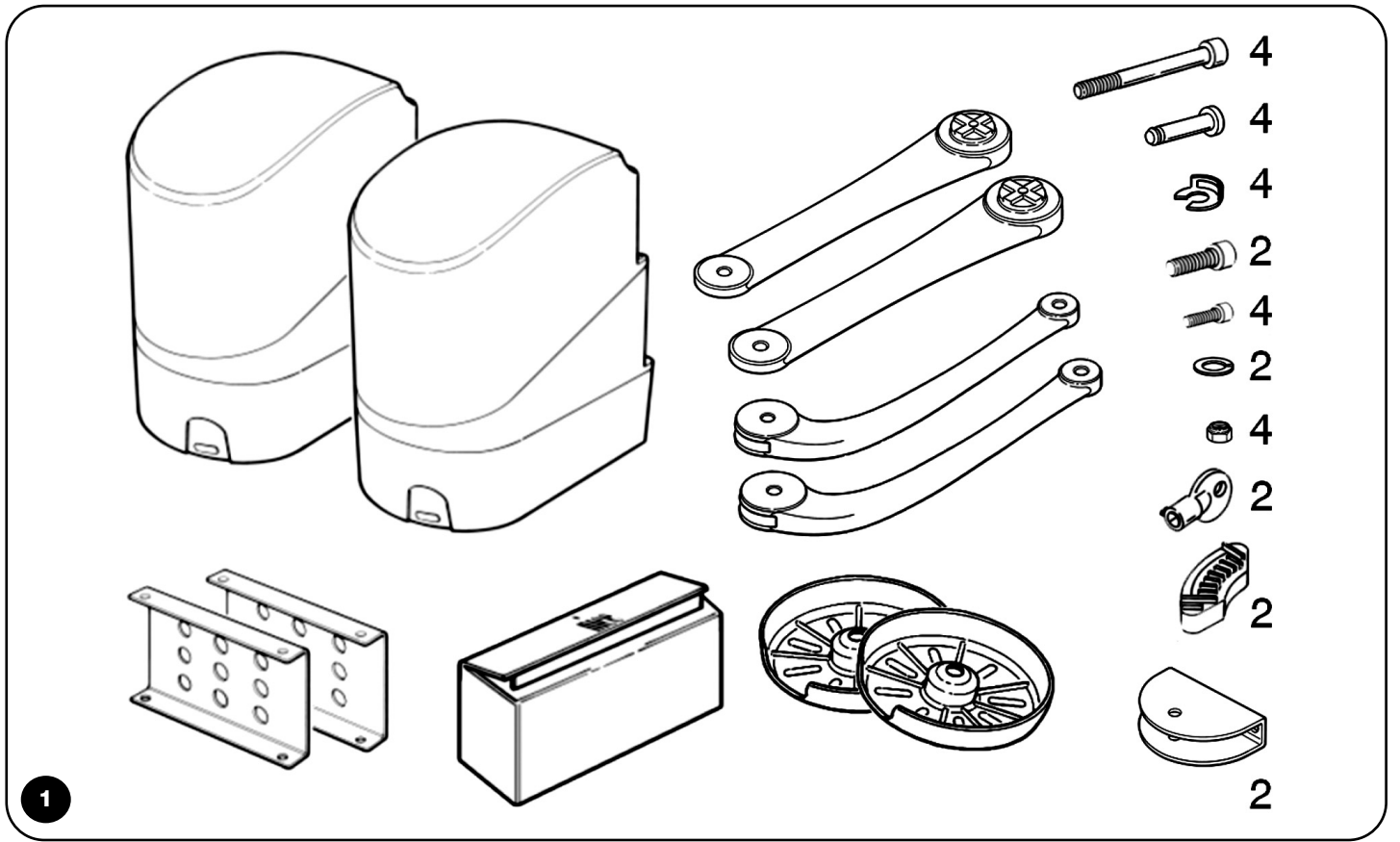
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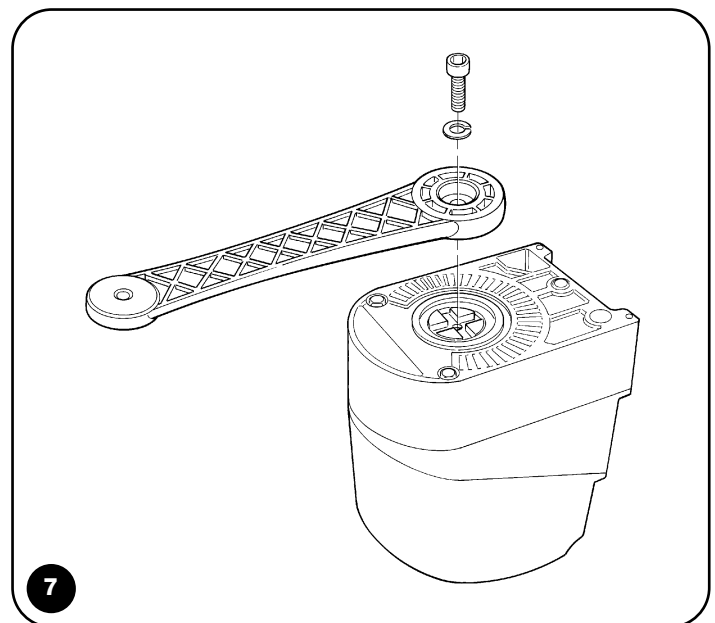
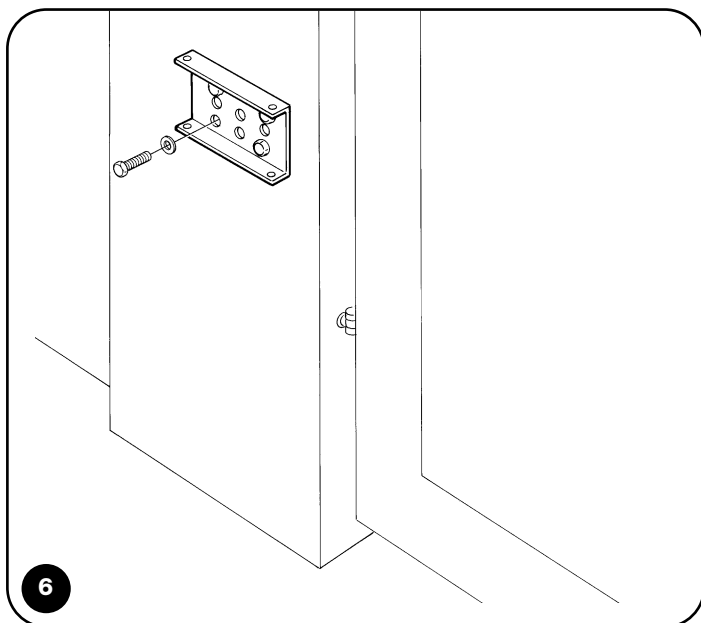
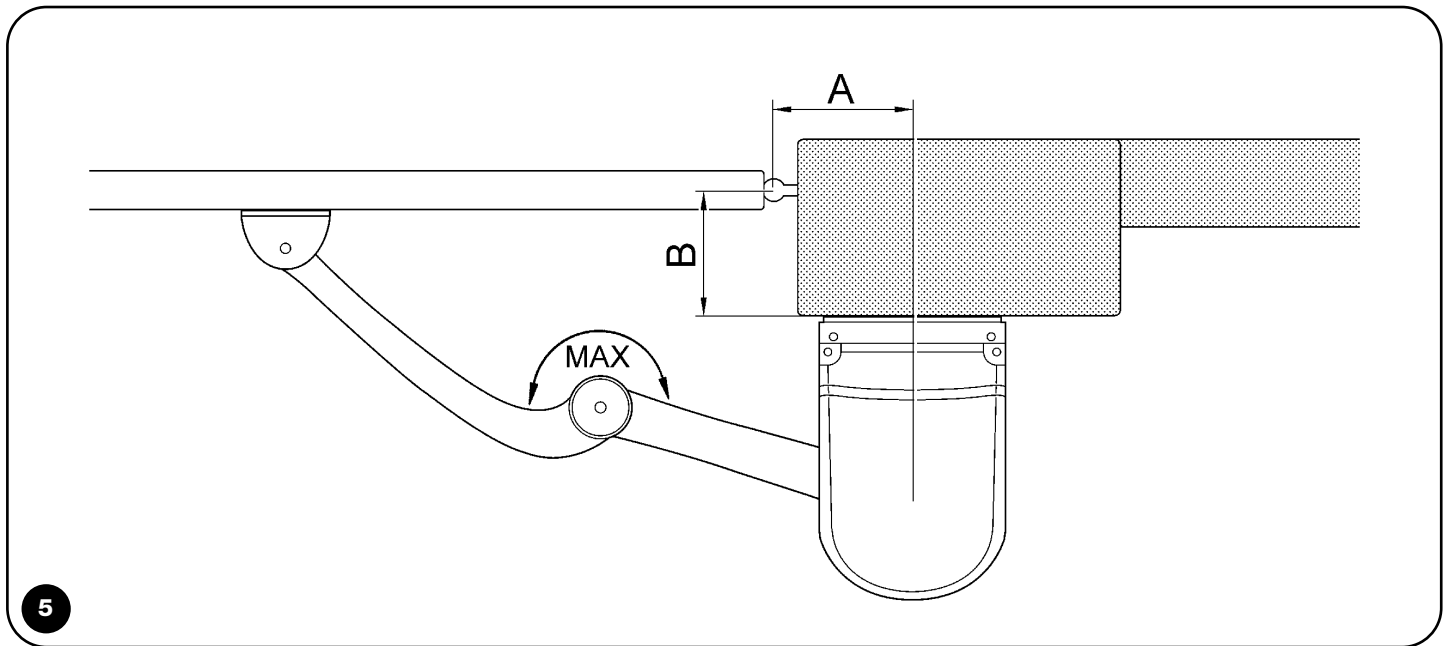
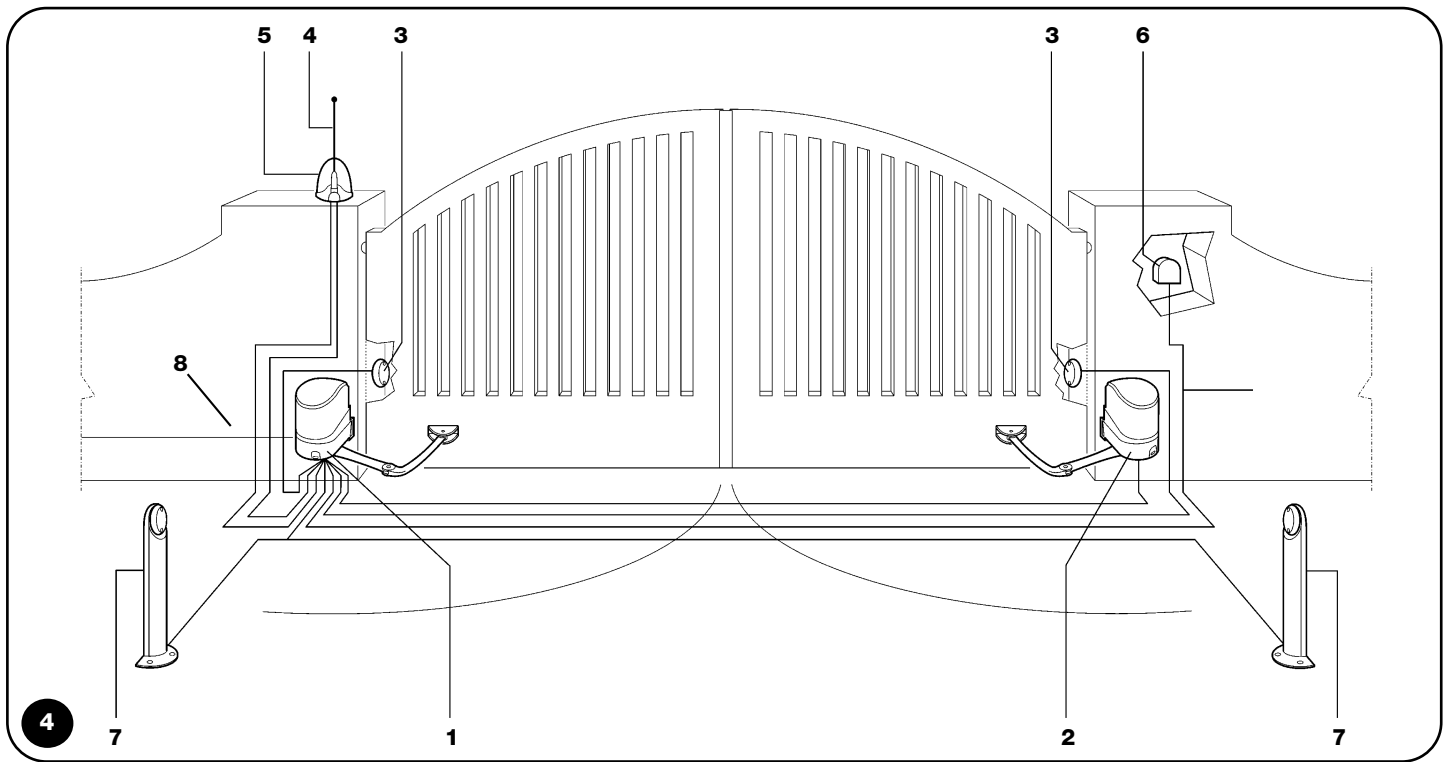
Instrucciones j advertencias para el instalador

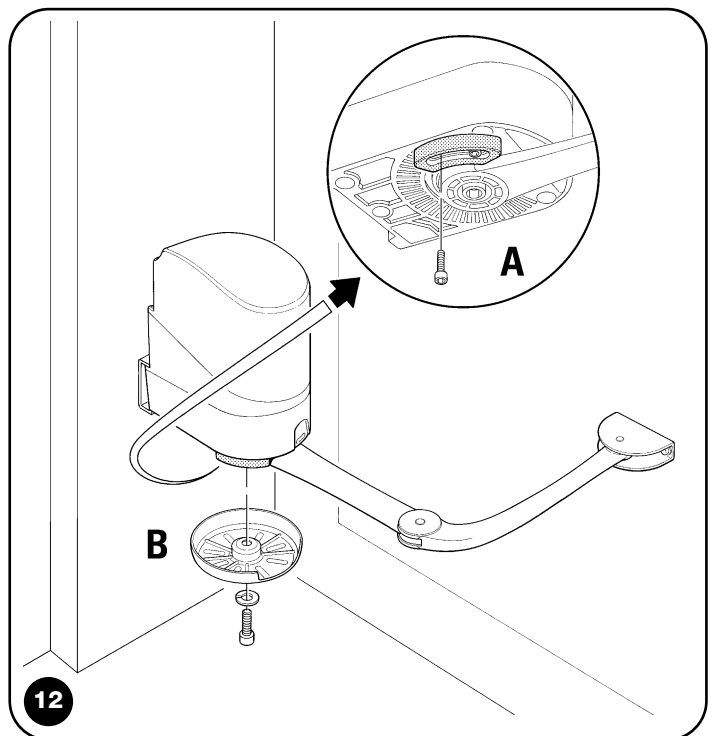
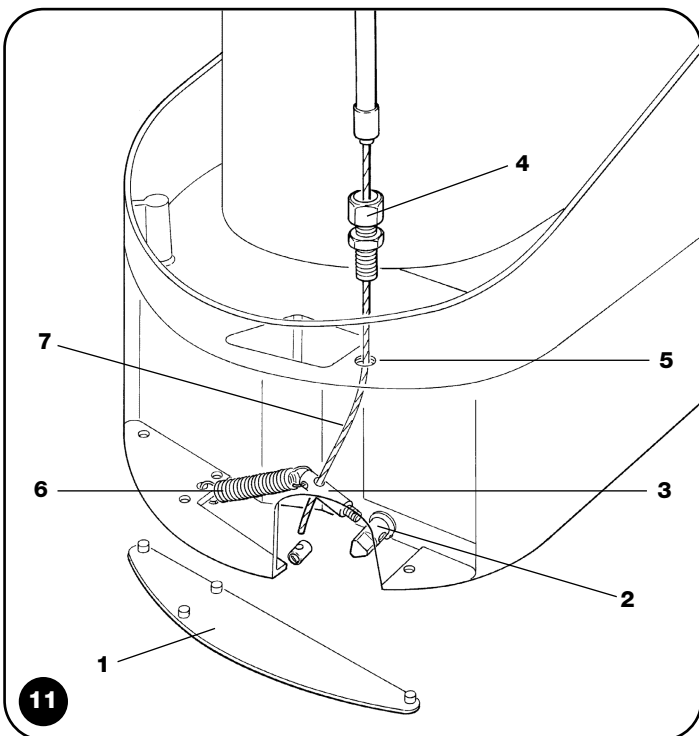
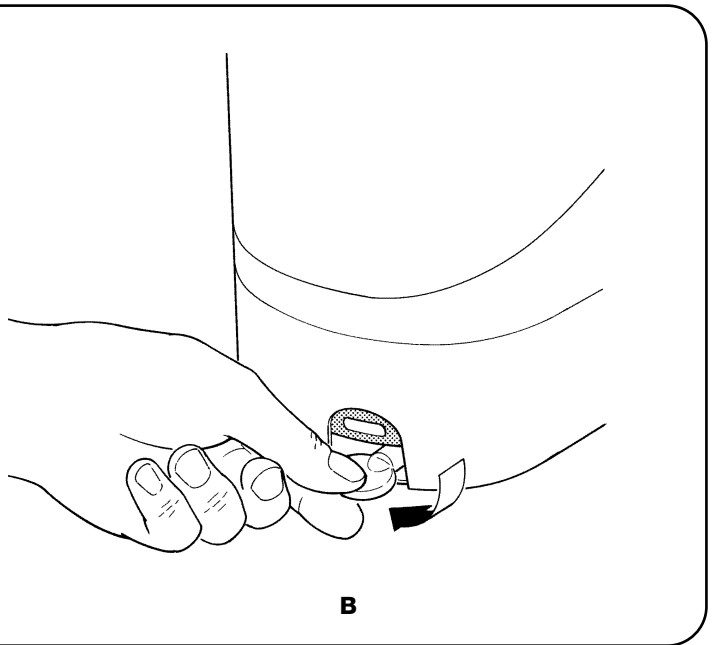
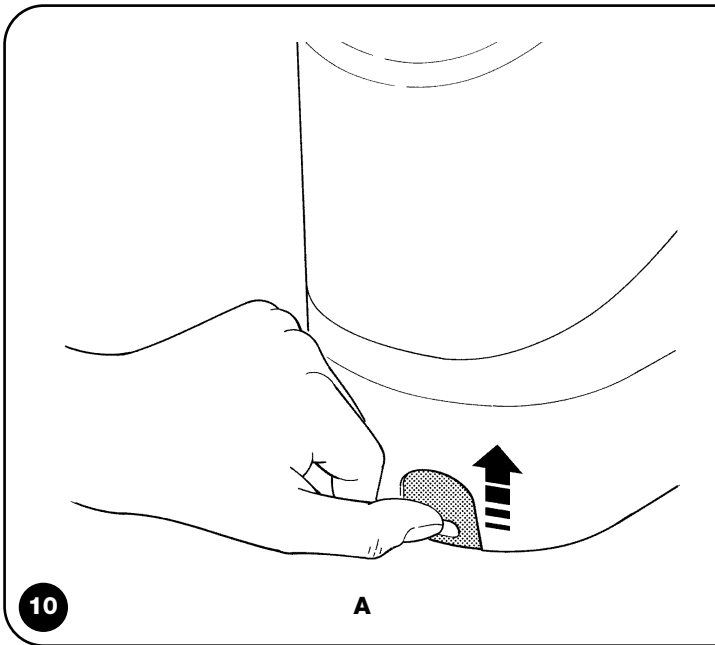
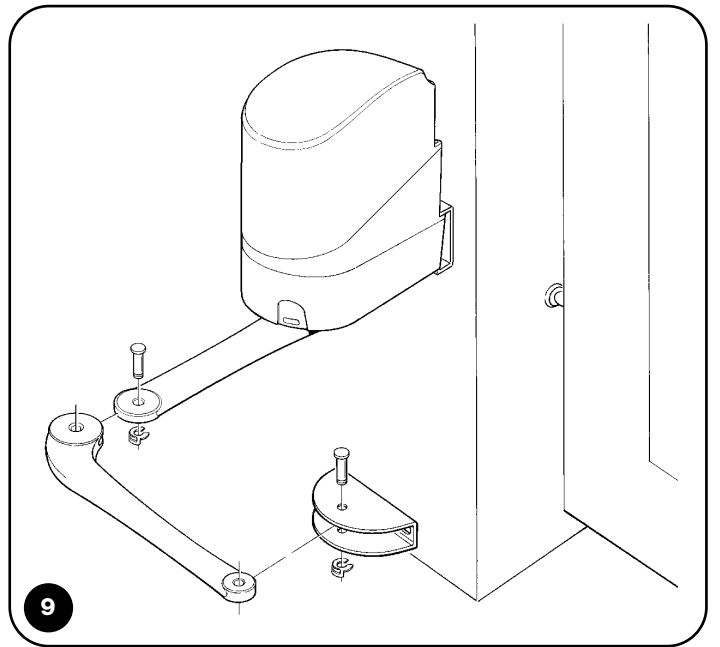
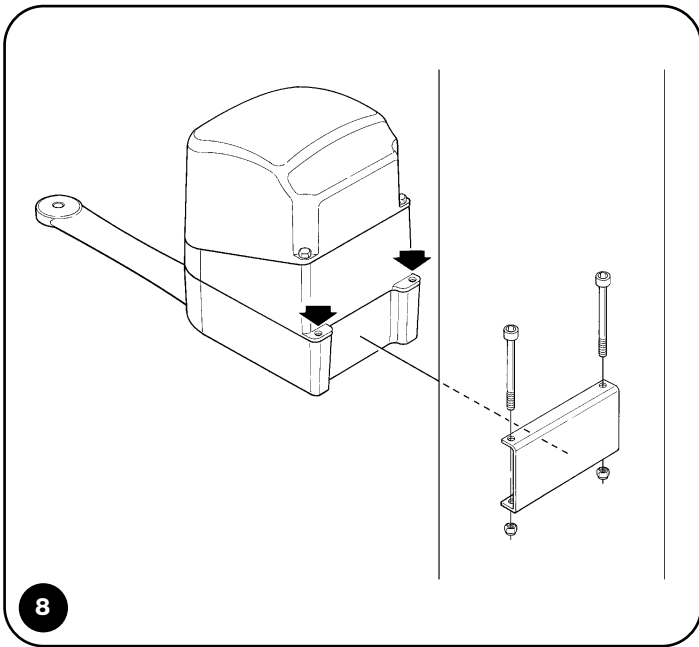
Instrukcja dla instalatora

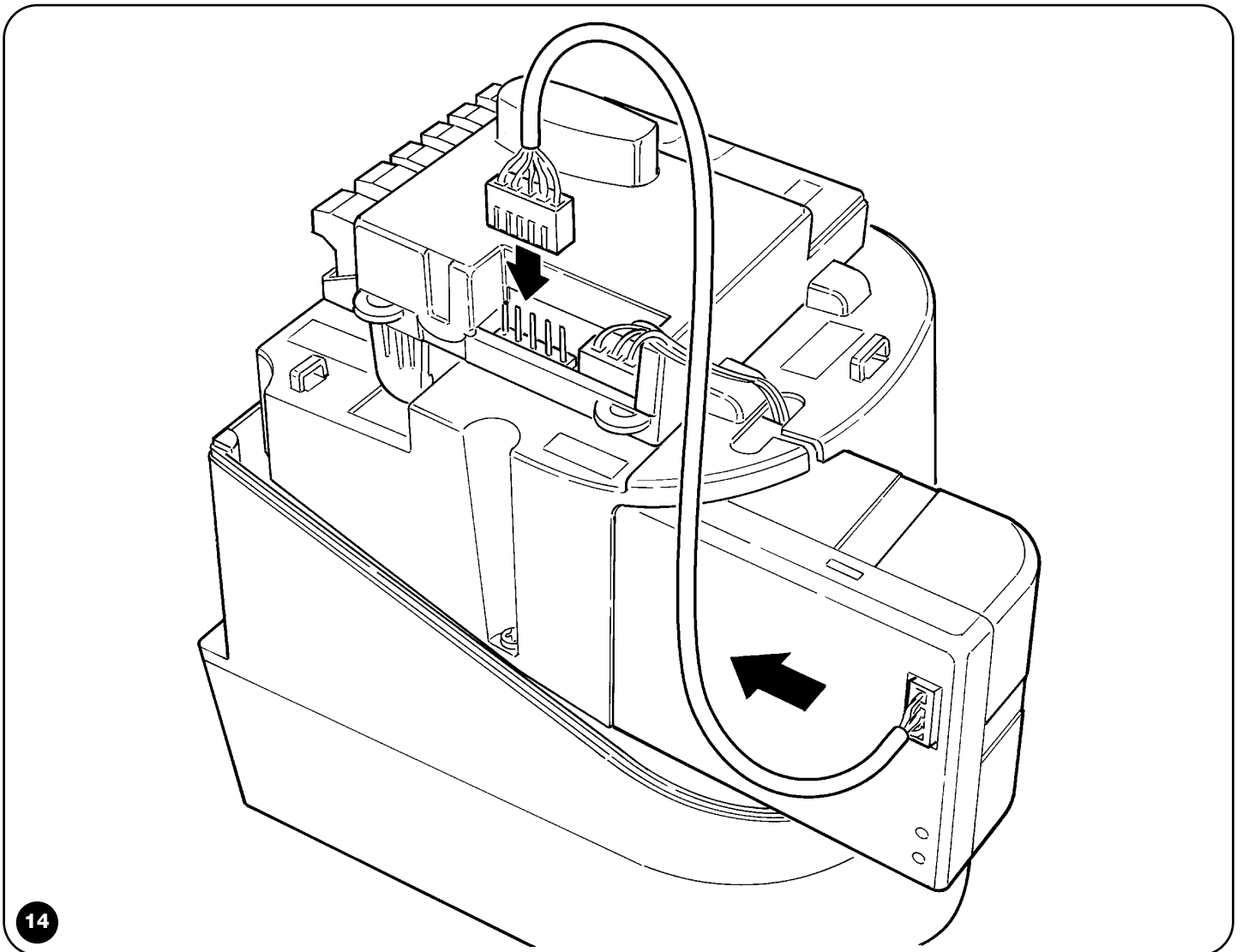
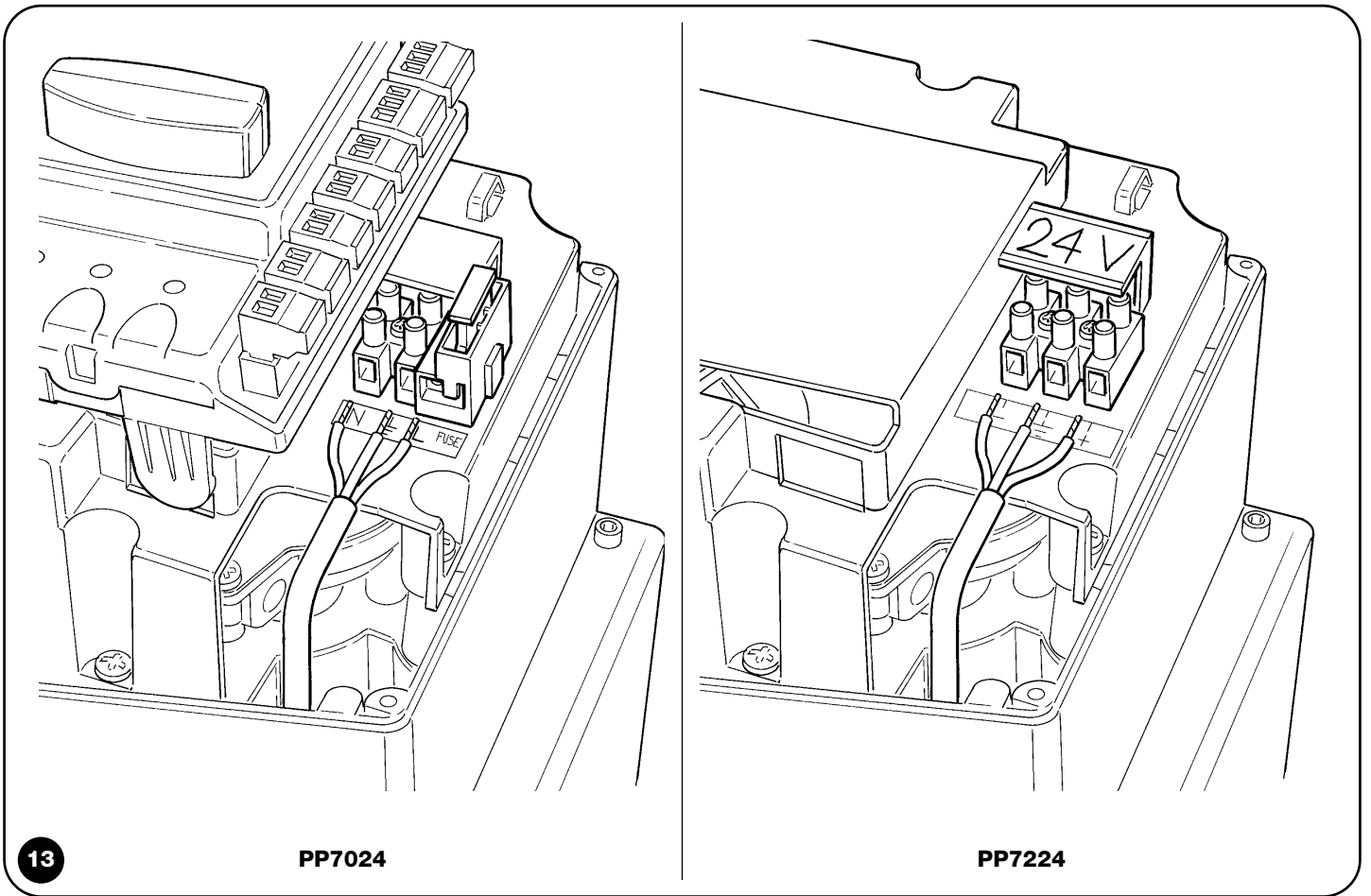
COMPANY
WITH QUALITY SYSTEM
CERTIFIED BY DNV
=ISO 9001/2000=

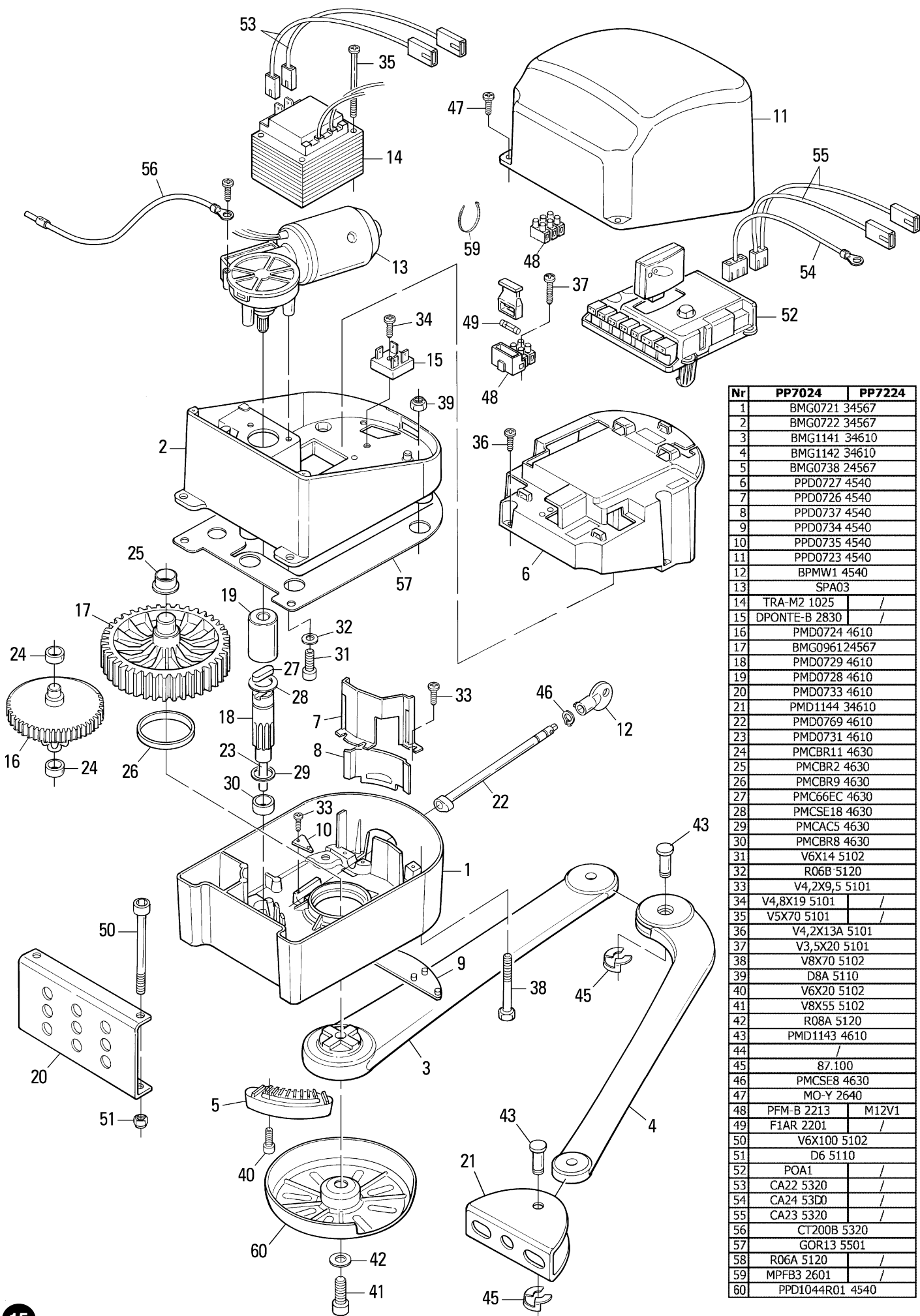
Nice











Nr	PP7024	PP7224
1	BMG0721	34567
2	BMG0722	34567
3	BMG1141	34610
4	BMG1142	34610
5	BMG0738	24567
6	PPD0727	4540
7	PPD0726	4540
8	PPD0737	4540
9	PPD0734	4540
10	PPD0735	4540
11	PPD0723	4540
12	BPMW1	4540
13	SPA03	
14	TRA-M2	1025
15	DPONTE-B	2830
16	PMD0724	4610
17	BMG0961	24567
18	PMD0729	4610
19	PMD0728	4610
20	PMD0733	4610
21	PMD1144	34610
22	PMD0769	4610
23	PMD0731	4610
24	PMCBR11	4630
25	PMCBR2	4630
26	PMCBR9	4630
27	PMCE6E	4630
28	PMCE18	4630
29	PMCA5	4630
30	PMCBR8	4630
31	V6X14	5102
32	R06B	5120
33	V4,2X9,5	5101
34	V4,8X19	5101
35	V5X70	5101
36	V4,2X13A	5101
37	V3,5X20	5101
38	V8X70	5102
39	D8A	5110
40	V6X20	5102
41	V8X55	5102
42	R08A	5120
43	PMD1143	4610
44		
45	87.100	
46	PMCE8	4630
47	MO-Y	2640
48	PFM-B	2213
49	F1AR	2201
50	V6X100	5102
51	D6	5110
52	POA1	
53	CA22	5320
54	CA24	53D0
55	CA23	5320
56	CT200B	5320
57	GOR13	5501
58	R06A	5120
59	MPFB3	2601
60	PPD1044R01	4540

Pop

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Warnings

Read these instructions before proceeding with the installation, as they provide important information regarding safety, installation, use and maintenance.

In order to make the use of these instructions as simple as possible, we have tried to follow the same order as the various phases of installation. Anything which is not specified in these instructions is not allowed, any unspecified use may damage the product and place people and objects in danger.

Nice disclaims any liability for the non-observance of good practice in the manufacturing of the gates, as well as any buckling which may occur during use. Store this manual safely for future use

This manual, as well as the design and manufacture of the devices that make up POP, comply fully with the standards and regulations in force. Considering the hazards that may exist during the installation and operation of POP, it is necessary that also the installation be carried out in strict compliance with current legislation, standards and regulations, particularly:

- Before you start with the installation, check whether additional devices or materials are needed to complete the automation with POP based on the specific application requirements.
- The automation system must not be used until it has been commissioned as described in paragraph "Commissioning".
- The packing materials must be disposed of in compliance with local regulations.
- Do not make modifications to any components unless provided for in this manual. This type of operations will only cause malfunctions. NICE disclaims any liability for damage resulting from modified products.

- Do not immerse the automation parts in water or any other liquid. During installation, ensure that liquids do not leak into the control unit or other open devices.
- In the event that liquid substances have penetrated inside the automation devices, immediately disconnect the power supply and contact the NICE customer service department. The use of POP in these conditions can be dangerous.
- Keep all components of POP away from heat sources and open flames; these could damage the components and cause malfunctions, fire or dangerous situations.
- During long periods of inactivity, the optional battery should be removed and stored in a dry location to prevent leakage of noxious substances.
- Connect the control unit only to a power supply line equipped with safety grounding system.
- All operations requiring the opening of the shells of POP device must be performed with the control unit disconnected from the power supply; if the disconnection device is not identifiable, post the following sign on it: "WARNING: MAINTENANCE WORK IN PROGRESS".
- In the event that any automatic switches or fuses are tripped, you must identify the failure and eliminate it before you reset them.
- If a failure occurs that cannot be solved using the information provided in this manual, refer to the NICE customer service department.

1) Product description

POP is a gearmotor for small and medium-sized swing gates. It automates gates with leaves of a maximum 2m in length and 200 kg in weight.

- PP7024 with incorporated control unit and 230V power supply (The PP7024/V1 version has a 120V power supply.)
- The PP7224 has no control unit, the PP 07224 gearmotor is connects with the PP7024 control unit.

2) Installation

The installation must be carried out by qualified and skilled personnel in compliance with the directions provided in chapter "WARNINGS".

2.1) Preliminary checks

Do not use POP to automate a gate that is inefficient and unsafe. The device does not solve faults resulting from incorrect installation or poor maintenance of the gate.

Make sure that the structure of the gate is suitable for automation and in compliance with regulations in force.

Make sure that:

- The packing is undamaged and contains all the parts shown in **Fig. 1**
 - o No.1 pc. PP7024
 - o No.1 pc. PP7224
 - o No.2 pcs. Straight arm
 - o No.2 pcs. curved arm
 - o No.2 pcs. Motor bracket
 - o No.1 pc. Box of accessories.
 - o No.1 pc. Electronic "Openkit" box

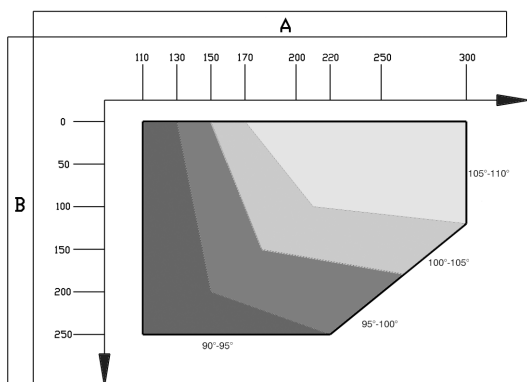
- The gate opens and closes without presenting points of friction.
- The gate is well balanced, i.e., if it is stopped in any position it must not display a tendency to start moving again.
- The area singled out for mounting the gearmotor allows easy, safe manoeuvring.
- Make sure that the mounting area is compatible with the overall dimensions of the gearmotor (**Fig. 2**).
- Make sure that the mounting positions of the various devices are protected from impacts and that the mounting surfaces are sufficiently sturdy.
- Make sure that the mounting surfaces of the photocells are flat and that they enable the proper alignment between TX and RX.
- Check that there is enough space for the arm to rotate (**Fig. 3**).

2.2) Typical system (Fig. 4)

1. POP "PP7024" actuator
2. POP "PP7224" actuator
3. Photocell
4. Aerial
5. Flashing light
6. Key-operated selector switch
7. Post for photocells (optional)
8. Power supply line

2.3) Mounting (Fig. 5)

Mount the brackets as follows:



Tab. 1

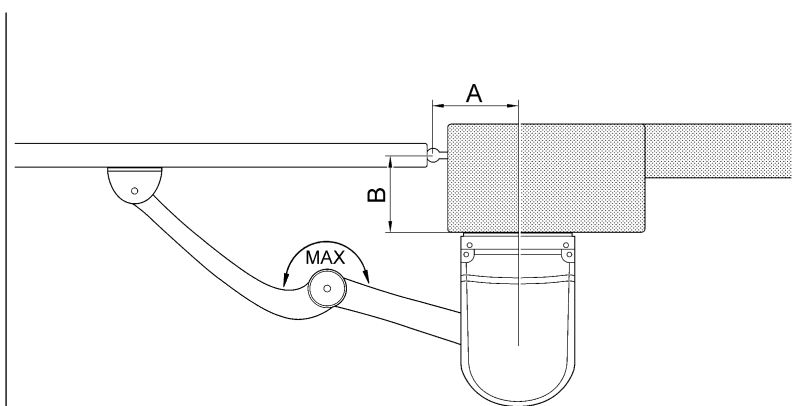


Fig. 5

1. Using the leaf opening angle as a guideline, check that the values in **Tab. 1** can be met.
2. Measure the value of "A" on site.
3. The value of "B" can be calculated from **Table 1** using the value of "A" together with the opening angle of the leaves. For example, if "A" is 100mm and a 100° opening is required, the value of "B" should be approximately 180mm.

2.4) Mounting the motor bracket to the pillar (Fig. 6)

Use screws which are suitable for the material the pillar is made of. Mount the bracket horizontally.

2.5) Assembly of the straight arm (Fig. 7)

Use the M8x55 screw with its relative grower washer. Make sure the arm is positioned by making it come out of the front part.

2.6) Mounting the gearmotor (Fig. 8)

Insert the POP in the plate at point C and mount it onto the former using M6x100 screws and the nuts supplied.

2.7) Assembling the curved arm and mounting the adjustable bracket to the leaf (Fig. 9)

Using the pins supplied, and the corresponding safety rings, fasten the bent arm to the straight arm, and the leaf mounting bracket to the bent arm.

Fasten the leaf mounting bracket to the gate as far away as possible from the post, extending the arms to their maximum reach (Fig. 5). The bracket can be welded to the gate or fastened with screws suited to the gate material.

2.8) Releasing the gearmotor from the inside (Fig. 10)

This is carried out in two steps:

A: lift the cover.

B: insert the release key supplied and turn it clockwise until it stops.

2.8.1) Releasing the gearmotor from the outside (Fig. 11) (optional)

The release system is assembled in six steps:

A: remove the plastic cover (1)

B: screw the pin (3) onto the release shaft (2)

C: screw the cable stretcher (4) into the special hole (5)

D: secure the spring (6) to the pin (3) and to the fastening point visible in the shell.

E: slide the release cable (7) into the pin hole (3) and cable stretcher (4).

F: replace the plastic cover (1) to its original position.

2.9) Securing the opening stop (Fig. 12)

Release the gearmotor.

A: rotate the leaf to the "gate open" position required. Then place the limit switch on the strike (the arm must be straight) and fasten it with two Mx25 screws.

B: loosen the screw which fastens the straight arm to the gearmotor, and fit the protective cover. Insert and tighten the screw which had been removed.

2.10) Electrical connections

Consult the Control Unit POA1 instruction booklet for the electrical connections.

2.11) Connection to the power supply (Fig. 13)

On PP7024: connect the 230V supply cable directly to the fuse holder terminal.

On PP7224: connect the cable from the PP7024 unit to the mammoth terminal.

2.12) Using buffer batteries (Fig. 14) (optional)

POP comes complete with housing for buffer batteries (optional). Break open the plastic cap on the control unit box in order to connect the box with the battery.

3) Manual or release manoeuvre

The manual operation (Fig. 10) must be resorted to in case of power failures or system malfunctions.

The manual manoeuvre only allows the gearmotor to travel freely if it is assembled correctly, complete with original accessories.

4) Testing and commissioning

These are the most important operations, designed to guarantee the maximum safety of the automation system. The testing procedure can also be used as a periodic check of the devices that make up the automation. The testing of the automation system must be performed by qualified and experienced personnel who must establish

what tests should be conducted based on the risk involved, and verify the compliance of the system with applicable regulations, legislation and standards, in particular with all the provisions of EN standard 12445 which establishes the test methods for gate automation systems.

4.1) Testing

1. Make sure that the provisions contained in the chapter "WARNINGS" have been carefully observed.
2. Test the opening and closing of the gate and make sure that the leaves move in the intended direction. The test should be carried out a number of times to make sure that the gate moves smoothly, that there are no points of excessive friction and that there are no defects in the assembly or adjustments.
3. Check the proper operation of all the safety devices, one by one.
4. Measure the impact force according to EN standard 12445. If "motor force" control is used to assist the system for the reduction of the impact force, try to find the adjustment that gives the best results.

5) Maintenance

The maintenance operations must be performed in strict compliance with the safety directions provided in this manual and according to the applicable legislation and standards. POP does not require any special maintenance. However, periodically make sure (at least once

every six months) that all the devices are perfectly efficient. To this end, carry out all the tests and checks described in paragraph 4.1 "Testing". If other devices are present, follow the directions provided in the corresponding maintenance schedule.

5.1) Disposal

POP is constructed of various types of materials, some of which can be recycled (aluminium, plastic, electric cables), while others must be disposed of (electronic boards).

⚠ WARNING: some electronic components may contain polluting substances; do not pollute the environment. Enquire about the recycling or disposal systems available in compliance with regulations locally in force.

1. Disconnect the automation system from the electric mains.
2. Disassemble all the devices and accessories, following in reverse order the procedures described in chapter 2 "Installation".
3. Remove the electronic board.
4. Sort the various electrical and recyclable materials and consign them to licensed firms for recovery and disposal.
5. Consign the remaining materials to authorized scrap collection centres.

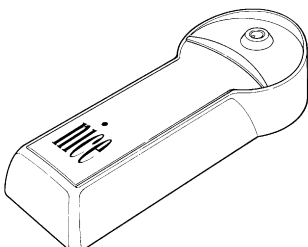
6) Technical characteristics

		PP7024	PP7024/V1	PP7224*
Power supply	Vac/Hz	230/50	120/50-60	/
	Vdc	/	/	24
Max. current	A	~1	~2	3
Motor power	W		75	
Torque	Nm		180	
Opening time	s		10	
Operating temperature	°C		-20°÷50°	
Protection class			IP 44	
Work cycle			30%	
Insulation class			1	B

* This version does not have a control unit.

7) Accessories

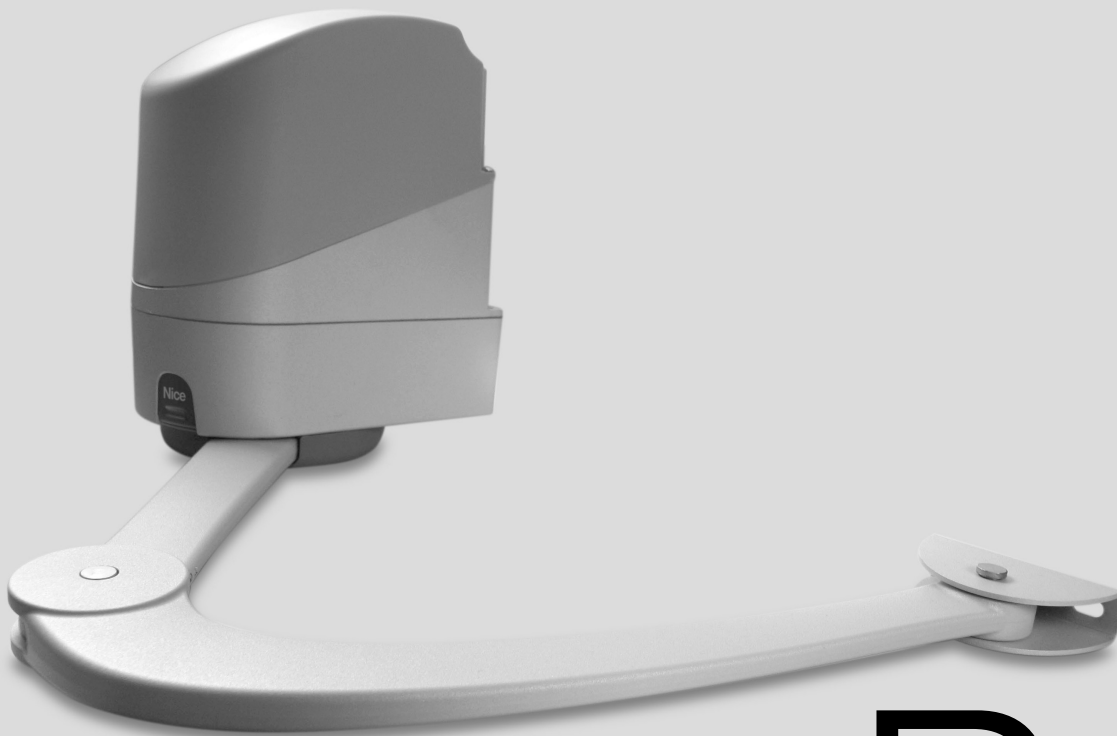
KIO - Key-operated selector switch with cord-type release



For swing gates



GB



POP

Instructions and warnings for users of the POP gearmotor

Congratulations for having chosen a Nice product for your automation system!

Nice S.p.a. produces components for the automation of gates, doors, rolling gates, roller shutters and awnings: gearmotors, control units, radio controls, flashing lights, photocells and miscellaneous accessories. Nice uses only the finest materials and first-class workmanship. It focuses on the development of innovative solutions designed to simplify the use of its equipment, dedicating meticulous care to the study of its technical, aesthetic and ergonomic characteristics. From the wide range of Nice products, your installation technician will certainly have selected the one best suited to your specific requirements.

However, Nice is not the producer of your automation system, which is rather the result of a combination of operations carried out by your installation technician, namely analysis, evaluation, selection of materials and system implementation. Each automation system is unique. Your installation technician is the only person who possesses the experience and professionalism needed to set up a system capable of satisfying your requirements, a system that is safe, reliable, long lasting and built in accordance with the regulations in force.

An automation system is not only very convenient; it also improves the level of security in your home. Moreover, it will last for years with very little maintenance. Even though the automation system you possess meets the safety requirements of the legislation in force, this does not exclude the existence of a "residual risk", i.e. the possibility that dangers may arise, usually as a result of improper or unreasonable use. We have prepared the following list of do's and don'ts to help you avoid any mishaps:

- **Before using your automation system for the first time**, ask the installer to explain the origin of any residual risks; take a few minutes and read the **users instructions manual** given you by the installer. Retain the manual for future use and deliver it to any subsequent owner of the automation system.
- **Your automation system is a machine that will faithfully execute your commands**; unreasonable or improper use may generate dangers: do not operate the system if there are people, animals or objects within its range of operation.
- **Children**: automation systems are designed to guarantee high levels of safety and security. They are equipped with detection devices that prevent movement if people or objects are in the way, guaranteeing safe and reliable activation. However, children should not be allowed

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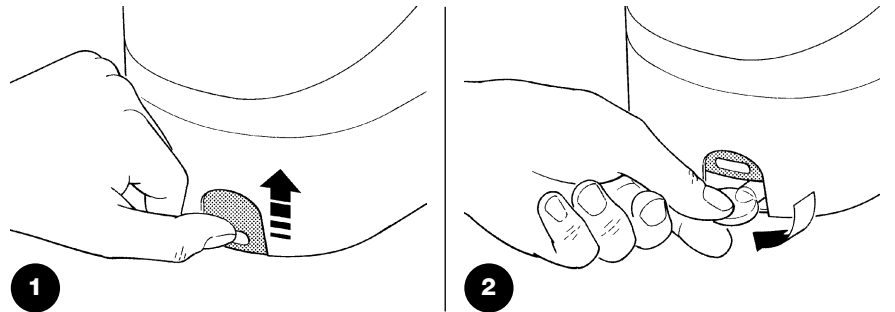
to play in the vicinity of automated systems; to prevent any accidental activations, keep all remote controls away from children: **they are not toys!**

- **Malfunctions:** If you notice that your automation is not functioning properly, disconnect the power supply to the system and operate the manual release device. Do not attempt to make any repairs; call the installation technician and, in the meantime, operate the system like a non-automatic gate after releasing the gearmotor as described below.
- **Maintenance:** Like any machine, your automation needs regular periodic maintenance to ensure its long life and total safety. Arrange a periodic maintenance schedule with your installation technician. Nice recommends that maintenance checks be carried out every six months for normal domestic use, but this interval may vary depending on the intensity of use. Only qualified personnel are authorized to carry out checks, maintenance operations and repairs.
- Do not modify the system or its programming and adjustment parameters in any way, even if you feel capable of doing it: your installation technician is responsible for the system.

- The final test, the periodic maintenance operations and any repairs must be documented by the person who has performed them; these documents must remain under the custody of the owner of the system.
- **Disposal.** At the end of its useful life, the automation must be dismantled by qualified personnel, and the materials must be recycled or disposed of in compliance with the legislation locally in force.
- **In the event of malfunctions or power failures.** While you are waiting for the technician to come (or for the power to be restored if your system is not equipped with buffer batteries), you can operate the system like any non-automatic gate. In order to do this you need to manually release the gearmotor: this operation, which is the only one that the user of the automation is authorized to perform, has been carefully designed by Nice to make it extremely easy, without any need for tools or physical exertion.

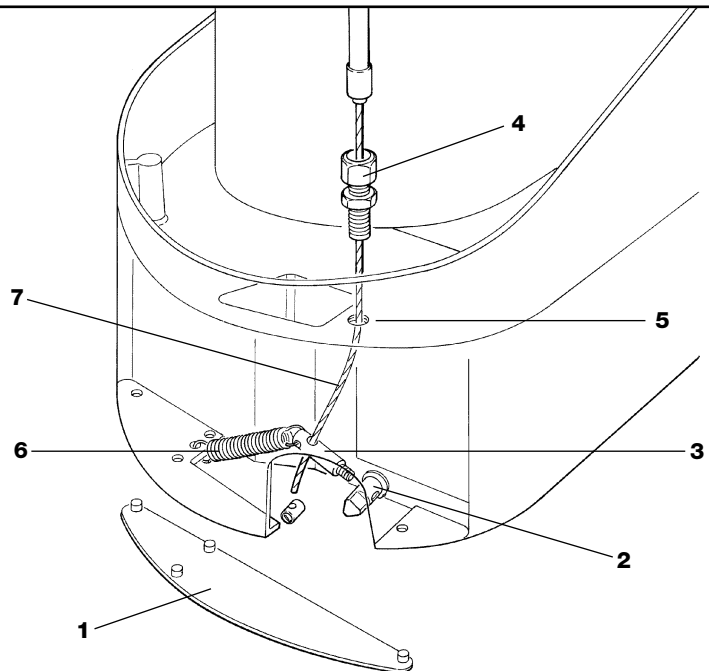
Releasing the gearmotor from the inside

1. Lift the cover.
2. Insert the release key supplied and turn it clockwise until it stops.



Releasing the gearmotor from the outside (optional)

- Remove the plastic cover (1)
- Screw the pin (3) onto the release shaft (2)
- Screw the cable stretcher (4) into the special hole (5)
- Secure the spring (6) to the pin (3) and to the fastening point in the shell.
- Slide the release cable (7) into the pin hole (3) and cable stretcher (4)
- Replace the plastic cover (1) to its original position.



Important: if your system is equipped with a radio control that, after a period of time, seems not to work as well, or not to work at all, it may simply be that the battery is exhausted (depending on the type of battery, it may last from several months up to two or three years). In this case you will see that the light confirming the transmission is weak, or does not come on, or comes on only briefly. Before calling the installation technician try exchanging the battery with one from another operating transmitter: if the problem is caused by a low battery, just replace it with another of the same type.

Are you satisfied? If you wish to install another automation system in your home, call your old installation technician and use Nice products. You will get the services of a specialist and the most advanced products available on the market, superior performances and maximum system compatibility.

Thank you for reading these instructions. We feel confident that you will be well satisfied with your new system. For any present or future requirements, please contact your reliable installation technician.

Dichiarazione CE di conformità / EC declaration of conformity

(secondo Direttiva 98/37/EC, Allegato II, parte B) (according to 98/37/EC Directive, Enclosure II, part B)

Numero / Number: 172/997224 Data / Date: 02/2003

Revisione / Revision: 0

Il sottoscritto Lauro Buoro, Amministratore Delegato, dichiara che il prodotto

The undersigned Lauro Buoro, General Manager of the following producer, declares that the product

Nome produttore / Producer name: NICE S.p.a.
Indirizzo / Address: Via Pezza Alta 13, 31046 Z.I. Rustignè - ODERZO - ITALY
Tipo / Type: Motoriduttore elettromeccanico / *Electromechanical gearmotor*
Modello / Model: PP7224
Accessori / Accessories: Nessun accessorio / No accessory

Risulta conforme a quanto previsto dalle seguenti direttive comunitarie / Complies with the following community directives

Riferimento n°	Titolo
Reference n°	Title
98/37/CE (EX 89/392/CEE)	DIRETTIVA MACCHINE / <i>Machinery Directive</i>
89/336/CEE	DIRETTIVA COMPATIBILITA' ELETTROMAGNETICA (EMC) / <i>EMC Electromagnetic Compatibility Directive</i>

Risulta conforme a quanto previsto dalle seguenti Norme armonizzate / Complies with the following Harmonised standards

Riferimento n°	Edizione	Titolo	Livello di valutazione	Classe
Reference n°	Issue	Title	Estimate level	Class
EN55022	09/1998	Caratteristiche di radiodisturbo. Limiti e metodi di misura <i>Information technology equipment - Radio disturbance characteristics. Limits and methods of measurement</i>		B

Risulta conforme a quanto previsto dalle altre norme e/o specifiche tecniche di prodotto / Complies with the other standards and/or product technical specifications

Riferimento n°	Edizione	Titolo	Livello di valutazione	Classe
Reference n°	Issue	Title	Estimate level	Class
EN 12445	8/2000	Porte e cancelli industriali e commerciali e da autorimessa. Sicurezza in uso di porte motorizzate - Metodi di prova <i>Industrial, commercial and garage doors and gates - Safety in use of power operated doors - Test methods</i>		
EN 12453	8/2000	Porte e cancelli industriali e commerciali e da autorimessa. Sicurezza in uso di porte motorizzate - Requisiti <i>Industrial, commercial and garage doors and gates - Safety in use of power operated doors - Requirements</i>		

Inoltre dichiara che non è consentita la messa in servizio del prodotto suindicato finché la macchina, in cui il prodotto stesso è incorporato, non sia identificata e dichiarata conforme alla direttiva 98/37/CEE / He declares, moreover, that it is not allowed to use the above mentioned product until the machine, in which this product is incorporated, has been identified and declared in conformity with the regulation 98/37/CEE.

P.S.: Il prodotto suindicato si intende parte integrante di una delle configurazioni di installazione tipiche, come riportato nei nostri cataloghi generali / The above mentioned product is meant integral part of the of one of the installation configuration as shown on our general catalogues.

Oderzo, 8 Maggio 2003

Amministratore delegato
(General Manager)
Lauro Buoro

**P.S.: La dichiarazione di conformità del modello "PP7024" e' presente nel fascicolo di istruzioni della centrale "POA1"
Please find the declaration of conformity for model "PP7024" in the instruction booklet for the "POA1" control unit.**



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CE



control unit



POA1

Instructions and warnings for the fitter

Istruzioni ed avvertenze per l'installatore

Instructions et recommandations pour l'installateur

Anweisungen und Hinweise für den Installateur

Instrucciones y advertencias para el instalador

Instrukcje i uwagi dla instalatora

Aanwijzingen en aanbevelingen voor de installateur

POA1

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Warnings:

⚠ This manual has been especially written for use by qualified fitters. The information provided in this manual is of no use to end users!

This manual refers to the POA1 control unit and must not be used for any other products.

The POA1 control unit has been designed to control electromechanical actuators for automated swing gates or doors; any other use is considered improper and is consequently forbidden by the laws currently in force. Do not install the unit before you have read all the instructions at least once.

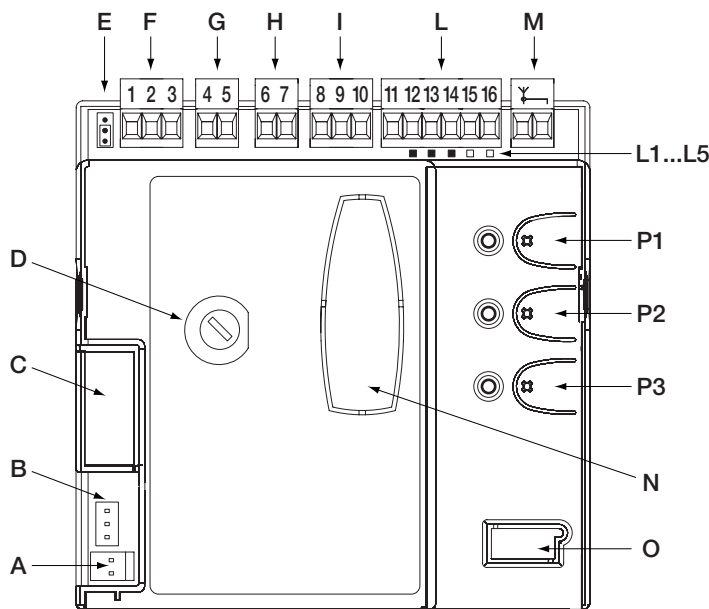
1) Product description:

The POA1 control unit operates on the basis of a current sensitivity system which checks the load of the motors connected up to it. The system automatically detects travel stops, memorises the running time of each motor and recognises obstacles during normal movement (anti-crush safety feature).

This feature makes installation easier as there is no need to adjust the working times nor the leaf delay.

The control unit is pre-programmed for the normal functions, while more specific functions can be chosen following a simple procedure.

The most important components of the POA1 control unit have been shown in Fig.1 in order to facilitate part identification.



POA1 Control unit

- A:** 24V power supply connector
- B:** M1 motor connector
- C:** PS124 buffer battery connector
- D:** 500mA F type services fuse
- E:** Selector switch for delaying the opening of motors M1 or M2
- F:** M2 motor terminal
- G:** Flashing light output terminal
- H:** Gate open indicator or electric lock output terminal
- I:** 24Vdc terminals for services and phototest
- L:** Input terminal
- L1...L5:** "Input" and "programming" LEDs
- M:** Terminal for radio aerial
- N:** "SM" radio receiver connector
- O:** Programming/diagnostics connector
- P1, P2, P3:** Programming buttons and leds

⚠ The control unit is housed inside special casing in order to protect the electronic card from accidental damage.

2) Installation

⚠ Automatic gate and door systems must only be installed by qualified fitters in the full compliance with the law.

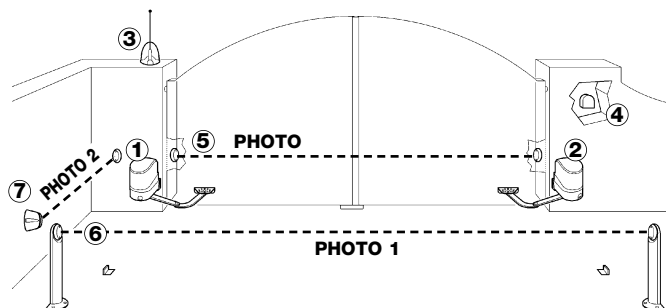
Be sure to note the warnings listed in the "Warnings for fitters" file.

2.1) Typical system layout

The typical system layout has been illustrated below in order to explain certain terms and aspects of an automatic 2-leaf swing door or gate system.

In particular, please note that:

- Refer to the product instructions for the characteristics and connection of the photocells.
- The "PHOTO" pair of photocells have no effect on the gate during opening, while they reverse movement during closing.
- The "PHOTO1" pair of photocells stops both the opening and closing manoeuvres.
- The "PHOTO2" pair of photocells (connected to the suitably programmed AUX input) have no effect during closing while they invert movement during opening.



- 1.** PP7024 Electromechanical actuator (complete with incorporated control unit POA1) and
- 2.** PP7224 Electromechanical actuator without control unit
- 3.** Flashing light
- 4.** Key switch
- 5.** "PHOTO" pair of photocells
- 6.** "PHOTO1" pair of photocells
- 7.** "PHOTO2" pair of photocells

2.2) Preliminary checks

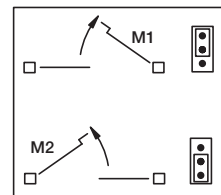
Before starting any kind of work, ensure that all the material is suitable for installation and complies with legal requirements. As well as checking all the points listed in the "Warnings for fitters" file, this section also contains a specific check list for the POA1 control unit.

- The "mechanical stops" must both be able to stop the gate from moving and easily absorb all the kinetic energy accumulated during movement (if necessary, use the stops for POP motors).
- The power supply line must be protected by magneto-thermal and differential switches and equipped with a disconnection device. There must be over 3mm between the contacts.
- Power the control unit using a 3 x 1.5mm² cable. Install an earth plate near the control unit if the distance between the control unit and the earth connection is over 30m.
- Use wires with a minimum cross section of 0.25mm² to connect extra-low voltage safety circuits.
- Use shielded wire if the length is over 30m and only connect the earth braid on the control unit side. The cross-section of the connection cable for the motor must be at least 1.5mm².
- Do not connect cables in buried boxes even if they are completely watertight.

2.3) Electrical connections

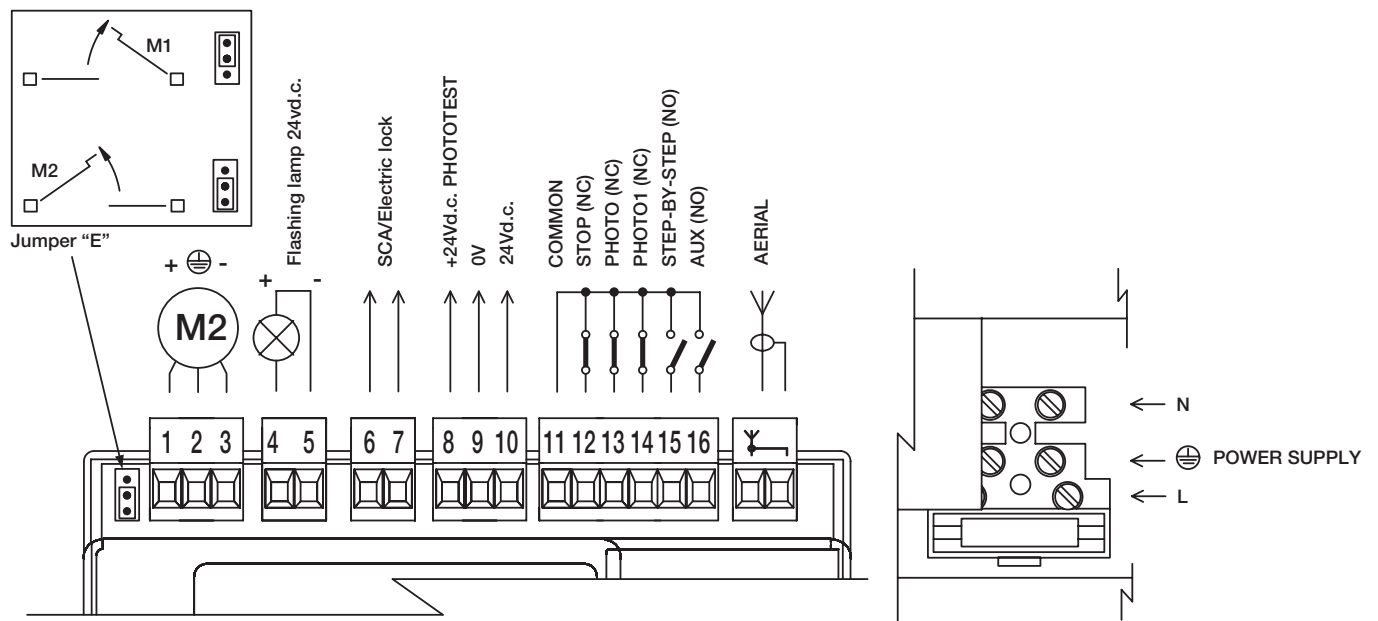
⚠ Unplug the unit from all sources of electricity in order to ensure the fitter is protected and to prevent components being damaged during electrical or radio receiver connection.

- With the exception of the photocell inputs when the PHOTOTEST function is activated, if the inputs of the NC (Normally Closed) contacts are not in use they should be jumped with the "COMMON" terminal. Refer to paragraph 2.3.6 for further information.
- If there is more than one NC contact on the same input, they must be connected in SERIES.
- If the inputs of the NO (Normally Open) contacts are not used they should be left free.
- If there is more than one NO contact on the same input, they must be connected in PARALLEL.
- The contacts must be mechanical and potential-free. Stage connections, such as those defined as "PNP", "NPN", "Open Collector", etc. are not allowed.
- If the leaves overlap, use jumper E (Figure 1) to select which motor starts up first during opening. M1 has an incorporated control unit, M2 does not.



Jumper "E"

2.3.1) Electrical diagram



2.3.2) Description of connections

Here follows a brief description of the possible control unit output connections:

Terminals	Function	Description
L-N- Ⓢ	Power supply line	mains power supply
1÷3	Motor 2	* M2 motor connection
4÷5	Flashing light	Connection of flashing light 24Vd.c. max. 25W
6÷7	Open Gate indicator/Elect.Lock	Connection for Open Gate Indicator 24Vac max. 5W or Electric lock 12V max. 25VA please refer to the "Programming" chapter)
8	24Vdc/Phototest	Power Supply +24V TX photocells for phototest (max. 100mA)
9	0Vdc	0V Power supply for services
10	24Vdc	Power input for services, RX photocells, etc. (24Vac max. 200mA)
11	Common	Common for all inputs (+24Vdc)
12	STOP	**Input with STOP function (emergency, safety shutdown)
13	PHOTO	NC Input for safety devices (photocells, sensitive edges)
14	PHOTO1	Input NC for safety devices (photocells, sensitive edges)
15	STEP-BY-STEP	Input for cyclical functioning (OPEN-STOP-CLOSE-STOP)
16	AUX	*** Auxiliary input
17÷18	Aerial	Connection for the radio receiver aerial

* This is not used for single leaf gates (the control unit automatically recognises if only one motor has been installed).

** The STOP input can be used for "NC" or constant resistance 8,2kΩ contacts (please refer to the "Programming" chapter)

*** The auxiliary input AUX may be programmed in one of the following functions:

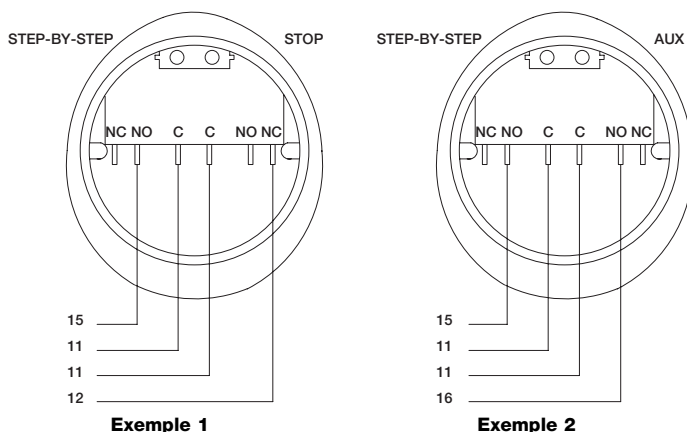
Function	Input type	Description
PARTIAL OPEN TYPE 1	NO	Fully opens the upper leaf
PARTIAL OPEN TYPE 2	NO	Opens the two leaf half way
OPEN	NO	Only carries out the opening manoeuvre
CLOSE	NO	Only carries out the closing manoeuvre
PHOTO 2	NC	PHOTO 2 function
DISABLED	- -	No function

Unless otherwise programmed, the AUX input performs the Partial Open TYPE 1 function

2.3.3) Notes about connections

Most connections are extremely simple and many of them are direct connections to a single user point or contact.

The following figures show examples of how to connect external devices.



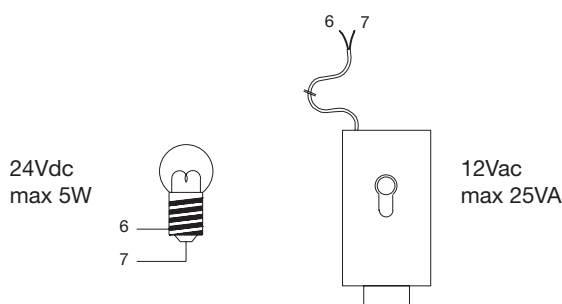
Key switch connection

Example 1

How to connect the switch in order to perform the STEP-BY-STEP and STOP functions.

Example 2

How to connect the switch in order to perform the STEP-BY-STEP function and one of the auxiliary input functions (PARTIAL OPENING, OPEN ONLY, CLOSE ONLY ...).



Connection for Gate Open Indicator/Electric lock

If the gate open indicator has been programmed, the output can be used as an open gate indicator light. It flashes slowly during opening, and quickly during closing. If it is on but does not flash, this indicates that the gate is open. If the light is off, the gate is closed. If the electric lock has been programmed, the output can be used as an electric lock. The electric lock will activate for 3 seconds each time opening begins.

2.3.4) STOP type input

The POA1 control unit can be programmed for two types of STOP input:

- NC type STOP for connecting up to NC type contacts
- Constant resistance STOP: it enables the user to connect up to the control unit of devices with 8.2kΩ constant resistance (e.g. sensitive edges). The input measures the value of the resistance and disables the manoeuvre when the resistance is outside the nominal value. Devices with normally open "NO" or normally closed "NC" contacts, or multiple devices, even of different types, can be connected to the constant resistance STOP input, provided that appropriate adjustments are made. For this purpose, refer to the following table:

		1st device type:		
		NO	NC	8,2KΩ
o 2nd device type:	NO	In parallel (note 1)	(note 2)	In parallel
	NC	(note 1)	In series (note 3)	In series
	8,2KΩ	In parallel	In series	(note 4)

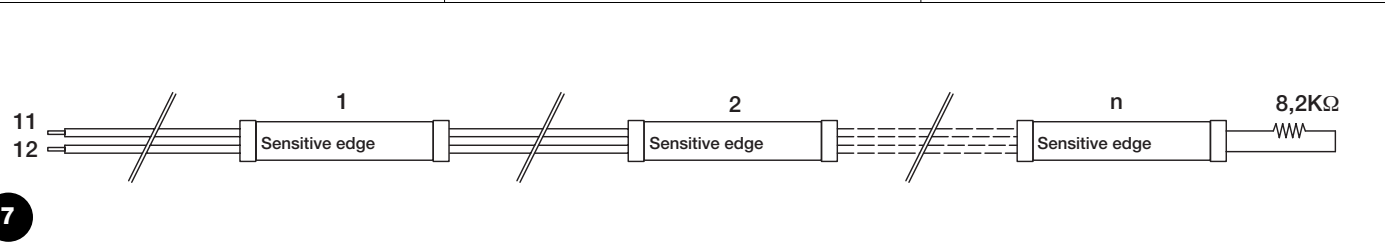
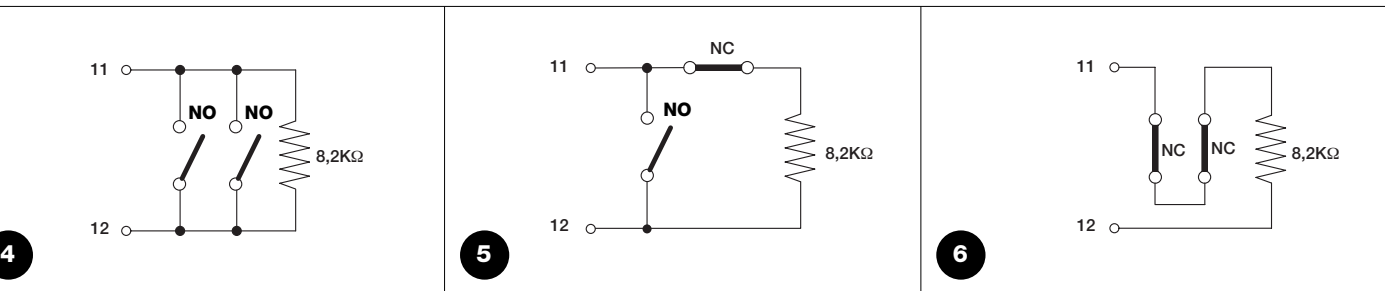
Note 1. Any number of NO devices can be connected to each other in parallel, with an 8.2KΩ termination resistance (Figure 4).

Note 2. The NO and NC combination can be obtained by placing the two contacts in parallel, and placing an 8.2KΩ resistance in series with the NC contact. It is, therefore, possible to combine 3 devices: NO, NC and 8.2KΩ.(Figure 5)

Note 3. Any number of NC devices can be connected in series to each other and to an 8.2KΩ resistance (Figure 6).

Note 4. Only one device with an 8.2KΩ constant resistance output can be connected; multiple devices must be connected "in cascade" with a single 8.2KΩ termination resistance (Figure 7)

⚠ If the constant resistance STOP input is used to connect devices with safety functions, only the devices with 8.2KΩ constant will resistance output guarantee the fail-safe category 3.



2.3.5) Examples of photocell connections without the phototest function.

Connecting the PHOTO photocell only.

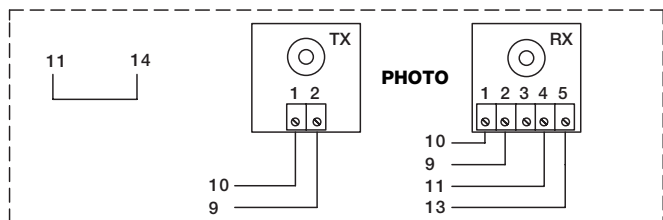
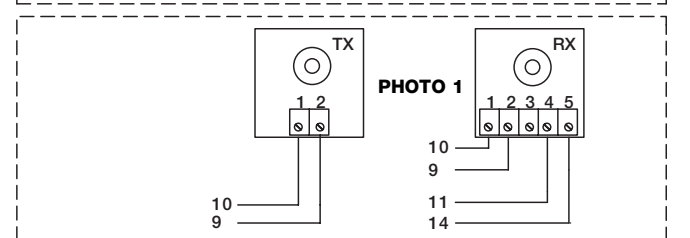
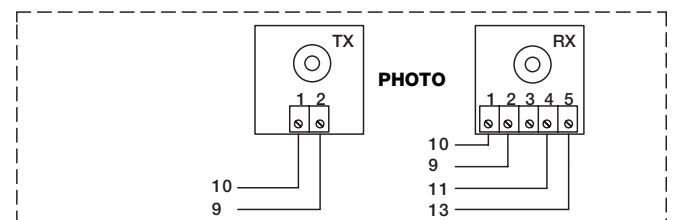
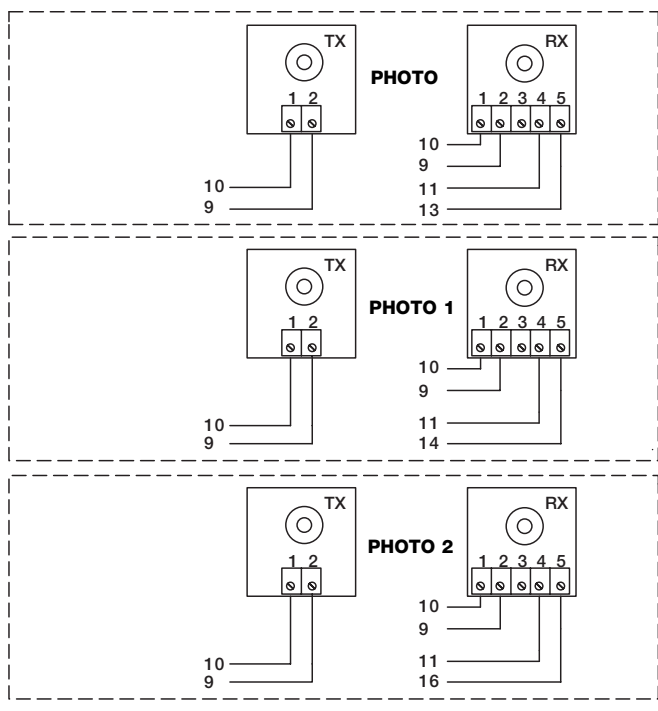


PHOTO and PHOTO1 connections



PHOTO, PHOTO1 and PHOTO2 connections (The auxiliary input AUX must be programmed as PHOTO2)



2.3.6) Examples of photocell connections with the phototest function.

The programmable PHOTO-TEST function is a feature on the POA1 control unit (this function is not activated initially). This is an excellent solution as regards the reliability of safety devices and places the control unit and safety devices in "Category 2" of UNI EN 954-1 standard (ed. 12/1998). The safety devices are checked whenever a manoeuvre is started, and will only begin if everything is in order. This is only possible using a special configuration of the safety device connections. The "TX" photocell transmitters are basically powered separately from the "RX" receivers.

When the phototest is activated, the FOTO, FOTO1 and FOTO2 inputs will be subjected to testing. If one of these inputs is not being used, it must be connected to terminal n°8. Please consult the following figures for examples of connections.

Connecting the PHOTO photocell only.

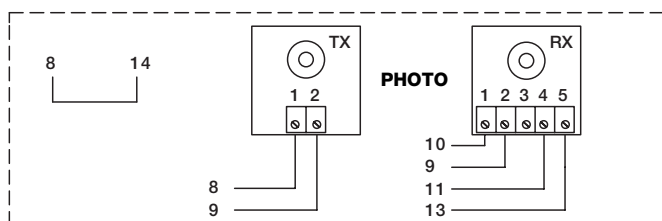
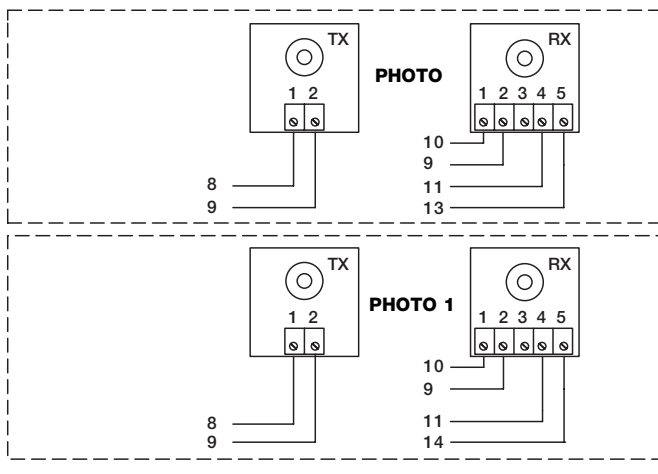
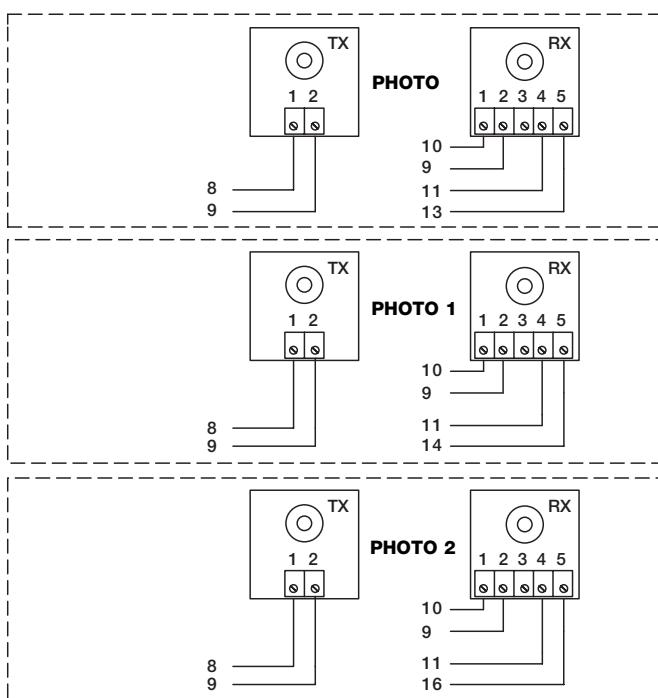


PHOTO and PHOTO1 connections



PHOTO, PHOTO1 and PHOTO2 connections (The auxiliary input AUX must be programmed like PHOTO2)



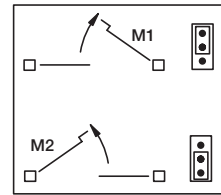
2.3.7) Checking the connections

⚠ WARNING: The next operations involve work being carried out on live circuits. Some parts have mains voltage running through them and are therefore EXTREMELY DANGEROUS! Pay maximum attention to what you are doing and NEVER WORK ALONE!

The system can be checked once the connections for the automation have been made.

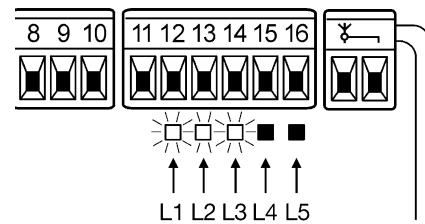
1. Power the control unit and check that all the LEDs flash rapidly for a few seconds.
2. Check that there is a voltage of approximately 32Vdc on terminals 9-10. If not, unplug the unit immediately and carefully check the connections and input voltage.
3. After initially flashing rapidly, the P1 LED will indicate the control unit is working correctly by flashing regularly at 1 second intervals. When there is a variation in the inputs, the "P1" led will rapidly flash twice to show that the input has been recognised.

4. If the connections are correct, the LED for the "NC"-type inputs will be on, while those for the "NO" type inputs must be off. Here follows Figure 8 illustrating the LEDs on, and the summary table of the various possible situations:
5. Check that the relative LEDs switch on and off when the devices connected to the inputs are operated.
6. Check that by pressing P2 both motors perform a short opening manoeuvre, and the motor of the upper leaf starts first. Block the manoeuvre by pressing P2 again. If the motors do not start up for opening, invert the polarities of the motor cables. If, however, the first one to move is not the upper leaf, operate jumper E (see figure).



Jumper "E"

INPUT	INPUT TYPE	STATUS LED
STOP	STOP NC	L1 On
	CONSTANT RESISTANCE	L1 On
	STOP 8,2KΩ	
PHOTO		L2 On
PHOTO 1		L3 On
STEP-BY-STEP		L4 Off
AUX	OPEN PARTIALLY type 1	L5 Off
	OPEN PARTIALLY type 2	L5 Off
	OPEN ONLY	L5 Off
	CLOSE ONLY	L5 Off
	PHOTO2	L5 On



8

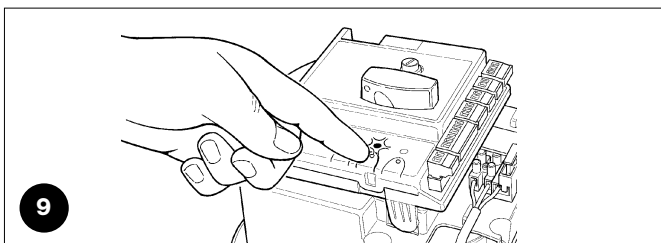
2.4) Automatic search system for the limit switches

On the successful completion of the various controls, start the automatic search system phase for the limit switches. This work is necessary as the POA1 control unit must "measure" how long the opening and closing manoeuvres take.

This procedure is completely automatic and detects the mechanical opening and closing stops by measuring the load on the motors.

If this procedure has already been carried out, in order to reactivate it, the user must first delete the memory (see the "Memory deletion" chapter). In order to check whether the memory contains any limit switch parameters, turn the power supply to the control unit on and then off again. If all the LEDs flash rapidly for approximately 6 seconds, the memory is empty. If, however, they only flash for 3 seconds, the memory already contains some limit switch parameters.

- Before starting limit switch searching, make sure that all the safety devices are enabled (STOP, PHOTO and PHOTO1). The procedure will be immediately interrupted if a safety device triggers or a command arrives.
- Ideally the doors should be half open, although they can be in any position.



9

- **Press the P2 button to begin searching, which runs as follows:**
 - Both motors open briefly
 - Motor closes the lower leaf until it reaches the mechanical closing stop.
 - The upper leaf motor closes until it reaches the mechanical closing stop.
 - The motor of the upper leaf begins to open.
 - After the programmed delay, opening of the lower leaf begins. If the delay is insufficient, block the search by pressing P1, then modify the time (see the "Programming" chapter).
 - The control unit measures the movement required for the motors to reach the opening mechanical stops.
 - Complete closing manoeuvre. The motors can start at different times, the aim is to prevent the leaves from shearing by maintaining a suitable delay.
 - End of the procedure with memorisation of all measurements.

All these phases must take place one after the other **without any interference** from the operator. If the procedure does not continue correctly, it must be interrupted with the P1 button.

Repeat the procedure, modifying some parameters if necessary, for example the current sensitivity cut-in thresholds (see the "Programming" chapter).

3) Testing


⚠ The automation system must be tested by qualified and expert staff who must establish which tests to perform depending on the relative risk.

Testing is the most important part of the whole installation phase. Each single component, e.g. motors, radio receiver, emergency stop, photo-cells and other safety devices, may require a specific test phase; please follow the procedures shown in the respective instructions manuals.

Carry out the following procedure in order to test the POA1 control unit, (the sequence refers to the POA1 control unit with pre-set functions).

- Make sure that the activation of the STEP-BY-STEP input generates the following sequence of movements: Open, Stop, Close, Stop.
- Make sure that the activation of the AUX input (Type 1 partial opening function) manages the Open, Stop, Close, Stop sequence of the motor of the upper leaf only, while the motor of the lower leaf remains in the closed position.
- Perform an opening manoeuvre and check that:
 - the gate continues the opening manoeuvre when PHOTO is engaged.
 - the opening manoeuvre stops when PHOTO1 is engaged and only continues when PHOTO1 is disengaged.
 - The manoeuvre stops when PHOTO2 (if installed) is engaged and the closing manoeuvre starts.

- Make sure that the motor switches off when the door reaches the mechanical stop.
- Perform a closing manoeuvre and check that:
 - The manoeuvre stops when PHOTO is engaged and the opening manoeuvre starts.
 - The manoeuvre stops when PHOTO1 is engaged and the opening manoeuvre starts when PHOTO1 is disengaged.
 - The gate continues the closing manoeuvre when PHOTO2 is engaged.
- Check that the stopping devices connected to the STOP input immediately stop all movement.
- Check that the level of the obstacle detection system is suitable for the application.
- During both the opening and the closing manoeuvres, prevent the leaf from moving by placing an obstacle and check that the manoeuvre inverts before exceeding the force set down by law.
- Other checks may be required depending on which devices are connected to the inputs.

 *If an obstacle is detected as moving in the same direction for 2 consecutive manoeuvres in the same direction, the control unit partially inverts both motors for just 1 second. At the following command, the leaves begin the opening manoeuvre and the first current sensitivity cut-in for each motor is considered as a stop during the opening cycle. The same happens when the mains power supply is switched on: the first command is always an opening manoeuvre and the first obstacle is always considered as an open limit switch.*

4) Diagnostics

The diagnostics LED P2 indicates any problems or malfunctions revealed by the control unit during the manoeuvre.

A sequence with a certain number of flashes indicates the type of problem and remains active until the following manoeuvre begins.

The table below summarises this information:

Number Flashing P2 LED	Type of malfunction
1	M1 current sensitivity device triggering
2	M2 current sensitivity device triggering
3	STOP input cut-in during the manoeuvre.
4	Phototest error
5	Output overcurrent gate open indicator or electric lock

5) Pre-set functions

The POA1 control unit features some programmable functions. After the search phase these are pre-set in a typical configuration which satisfies most automatic systems.

These functions can be changed at any time, both before and after searching, by carrying out the relevant programming procedure (refer to the "Programmable functions" chapter).

- | | | | |
|------------------------|---------------|-------------------------------------|---|
| • Motor movement: | : fast | • Close after photo | : deactivated |
| • Automatic closing | : active | • Opening delay | : level 2 (10%) |
| • Condominium function | : deactivated | • Phototest | : deactivated |
| • Pre-flashing | : deactivated | • Gate open indicator/Electric Lock | : Gate open indicator |
| | | • STOP input | : NC type |
| | | • Heavy gates | : deactivated |
| | | • Proportional gate open indicator | : deactivated |
| | | • Pause time | : 20 seconds |
| | | • Auxiliary input | : type 1 partial opening (only the upper leaf motor is activated) |
| | | • Current sensitivity | : Level 2 |

6) Programmable functions

To ensure the system is best suited to the user's requirements, and safe in the various different conditions of use, the POA1 control unit

offers the possibility to programme several functions or parameters, as well as the function of a number of inputs and outputs.

6.1) Direct programming

• Slow/rapid movement

The user can choose the speed of movement of the gate, at any time (with the motor arrested) simply by operating the P3 key at any

time the control unit is not being programmed. If LED L3 is off, this shows that the slow movement has been set, if on the fast one has.

6.2) Level one programming, part one

• Automatic closing:

This function features an automatic closing cycle after the programmed pause time; the pause time is factory set to 20 seconds but it can be modified to 5, 10, 20, 40 or 80 seconds.

If the function is not activated, the system will run "semi-automatically".

• "Condominium" function:

This function is useful when the automatic system is radio-commanded by many different people. If this function is active, each command received triggers an opening manoeuvre that cannot be interrupted by further commands. If the function has been deactivated, a command causes: OPEN-STOP-CLOSE-STOP

• Pre-flashing:

This function activates the flashing light before the manoeuvre begins for a time that can be programmed to 2, 4, 6, 8 or 10 seconds. If the function is deactivated, the light will start flashing when the manoeuvre starts.

• Close after photo:

During the automatic closing cycle, this function reduces the pause time to 4 seconds after the PHOTO photocell has disengaged, i.e. the gate closes 4 seconds after the user has passed through it. If the function is deactivated, the whole programmed pause time will pass.

• Opening delay

During opening, this function causes a delay in the activation of the lower leaf motor compared with the upper one. This is necessary in order to prevent the leaves from getting stuck. There is always a standard delay during closing, calculated automatically by the control unit in order to ensure the same delay as the one programmed for opening.

6.3) Level one programming, part two

• Phototest function

The POA1 control unit can also activate the phototest procedure. The correct functioning of the photocells is checked every time a manoeuvre starts. In order to be able to use this function, the photocells must be correctly connected up (refer to paragraph 2.3.6) and the function then activated. If the function is deactivated, the control unit will not carry out the photo-test.

• Open gate indicator light / electric lock

If the function is activated, terminals 6-7 can be used to connect up the electric lock. If the function is deactivated, terminals 6-7 can be used to connect up a 24V gate open indicator.

• NC Type or Constant Resistance STOP Input

If the function is activated, the STOP input is set to "8.2K Ω Constant Resistance". In this case, there must be a 8.2K Ω +/-25% resistance between the common and the input to enable the operation.

If the function is not set, the configuration of the STOP input will enable it to function with NC type contacts.

• Light/heavy gates

If the function is activated, the control unit enables the user to manage heavy gates, setting the acceleration ramps and slow-down speeds during closing differently.

If the function is deactivated, the control unit will be set to manage light gates.

• Proportional Open Gate Indicator

If the function is activated, the gate open indicator output will be set with the proportional flashing light. This means that during opening, the flashing becomes more intense as the leaves come nearer to the opening stops; vice-versa, for closing, the flashing becomes less intense as the leaves come nearer to the closing stops.

If the function is deactivated, the light will flash slowly during opening and rapidly during closing.

6.4) Level two functions

• Pause time

The pause time, namely the time which lapses between opening and closing during automatic functioning, can be programmed to 5, 10, 20, 40, and 80 seconds.

• Auxiliary Input AUX

The control unit offers an auxiliary input which can be set to carry out one of the following 6 functions:

- **Partial opening type 1:** this carries out the same function as the STEP-BY-STEP input. It causes only the upper leaf to open. It only works if the gate is closed completely, otherwise the command is interpreted as if it were a STEP-BY-STEP command.

- **Partial opening type 2:** this carries out the same function as the STEP-BY-STEP input. It causes the two leaves to open for half the time it would take them to open completely. It only functions if the gate is closed completely, otherwise the command is interpreted as if it were a STEP-BY-STEP command.

- **Open only:** this input only causes opening in the Open- Stop-Open-Stop sequence.

- **Close only:** this input only causes closing in the Close-Stop-Close-Stop sequence.

- **Photo 2:** this carries out the function of the "PHOTO 2" safety device.

- **Disabled:** the input will not carry out any function.

• Pre-flashing time:

A manoeuvre warning sign can be activated on the flashing light before each manoeuvre begins, and the time programmed to 1, 2, 4, 6, 8 and 10 seconds.

• Current sensitivity:

The control unit is equipped with a system which measures the current absorbed by the two motors used to detect the mechanical stops and any obstacles when the gate is moving. Since the current absorbed depends on a number of conditions, including the weight of the gate, friction, wind and variations in voltage, the cut-in threshold can be changed.

There are 6 levels: 1 is the most sensitive (minimum force), 6 is the least sensitive (maximum force).

⚠ If the “current sensitivity” function (together with other vital features) is adjusted correctly, the system will comply with European standards, EN 12453 and EN 12445, which require techniques or devices to be used to limit force and danger during the functioning of automatic gates and doors are moved.

• Leaf delay:

The delay in starting up the motor of the lower leaf can be programmed to 5, 10, 20, 30 or 40% of the working time.

7) Programming

All the functions described in the “Programmable functions” chapter can be selected by means of a programming phase which terminates by memorising the choices made.

The control unit therefore has a memory which stores the functions and parameters relative to the automation process.

7.1) Programming methods

The P1, P2 and P3 buttons are used for all the programming phases, while the 5 Leds (L1, L2...L5) indicate the selected “parameter”. There are two different programming levels:

- At **level 1**, the functions can be activated or deactivated. Each Led (L1, L2...L5) corresponds to a function: if the Led is on, the function is active; if it is off, it is deactivated.

Level one consists in 2 parts which can be selected using the P3 button. The corresponding LED P3 indicates which of the 2 parts has been selected.

Level one (fixed LED P1): part one - (LED P3 off)				
Led L1	Led L2	Led L3	Led L4	Led L5
Automatic closing	“Condominium” function	Pre-flashing	Close after photo	Opening delay

Level one (fixed LED P1): part two - (LED P3 on)				
Led L1	Led L2	Led L3	Led L4	Led L5
Phototest	Electric Lock	Resistive STOP	Heavy gates	Proportional Open Gate

- It is possible to pass to the **second level** from level one of part one. At this second level the user can choose the parameter relating to the function. A different value corresponds to each LED which must be associated to the parameter.

Level one (fixed LED P1): part one - (LED P3 off)				
Led L1	Led L2	Led L3	Led L4	Led L5
Automatic closing	“Condominium” function	Pre-flashing	Close after photo	Opening delay

Level one (fixed LED P1): part two - (LED P3 on)				
Led L1	Led L2	Led L3	Led L4	Led L5
Phototest	Electric Lock	Resistive STOP	Heavy gates	Proportional Open Gate

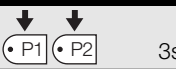



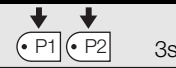
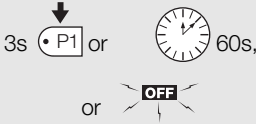
Second level:				
Parameter: Pause Time	Parameter: AUX Input	Parameter: Pre-flashing Time	Parameter: Current sensitivity	Parameter: Leaf Delay
L1: 5s	L1: Open partially type 1	L1: 2s	L1: Level 1 (most sensitive)	L1: 5%
L2: 10s	L2: Open partially type 2	L2: 4s	L2: Level 2	L2: 10%
L3: 20s	L3: Open only	L3: 6s	L3: Level 3	L3: 20%
L4: 40s	L4: Close only	L4: 8s	L4: Level 4	L4: 30%
L5: 80s	L5: Photo 2	L5: 10s	L5: Level 5 (least sensitive)	L5: 40%
	All LEDs off: input not used		All LEDs off: level 6 (max. current sensitivity)	

7.1.1) Level one programming: functions

At level one, the functions can be activated or deactivated.

At level one, LED P1 is always on; if LEDs L1, L2...L5 are on, the functions are activated; if the LEDs are off, the functions are deactivated. A flashing LED indicates which function has been selected;

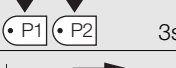
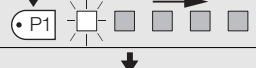

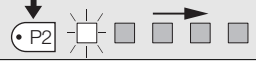

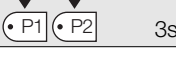
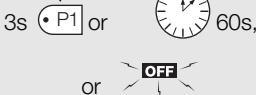
short flashes indicate the function has been deactivated; long flashes indicate the function has been activated. Press P3 to pass from part one programming to part two programming, and vice-versa.

Table "A1"	Entering level one programming:	Example
1.	Press and hold down buttons P1 and P2 for at least 3 seconds The programming mode has been entered if all the Leds start flashing quickly	
Table "A2"	Activating or deactivating a function:	Example
1.	Press P1 repeatedly until the flashing Led reaches the function required.	
2.	Press P2 to activate or deactivate the function.	
Table "A3"	To pass from part one to part two of level one (and vice-versa):	Example
1.	Press P3. button	
Table "A4"	To exit level one and save the modifications:	Example
1.	Press and hold down buttons P1 and P2 for at least 3 seconds	
Table "A5"	Exiting level one and delete the modifications:	Example
1.	Either press P1 for at least 3 seconds, or wait for 1 minute, or disconnect the power supply	

7.1.2) Level two programming: parameters

The function parameter can be chosen at level two. Level two can only be reached from level one.

At level 2 the P1 Led flashes quickly while the 5 Leds (L1, L2...L5) indicate the selected parameter.

Table "B1"	Entering level two programming:	Example
1.	Enter level one programming by pressing P1 and P2 for at least 3 seconds	
2.	Select the function by pressing P1 until the flashing Led reaches the point required.	
3.	Enter level two by pressing the P2 button for at least 3 seconds	
Table "B2"	Selecting the parameter:	Example
1.	Press P2 repeatedly until the Led reaches the desired parameter	
Table "B3"	Returning to level one:	Example
1.	Press P1	
Table "B4"	Exiting level one and saving modifications:	Example
1.	Press and hold down buttons P1 and P2 for at least 3 seconds	
Table "B5"	Exiting level one and cancelling modifications:	Example
1.	Either press P1 for at least 3 seconds, or wait for 1 minute, or disconnect the power supply	

7.2) Memory deletion

Each new programme replaces the previous settings. It is usually unnecessary to "delete all" the memory. If required, the memory can be totally deleted by performing this simple operation:

⚠ As all the functions return to their pre-set values after the memory is deleted, a new search for the mechanical stops must be carried out.

Table "C1"	Delete memory:	Example
1.	Switch the power supply to the control box off, and wait until all the LEDs have gone off (remove fuse F1 if necessary).	
2.	Press P1 and P2 on the board down and keep them pressed down.	
3.	Switch the power supply on again.	
4.	Wait at least 3 seconds before releasing the two keys	3s

If the memory was deleted correctly, all the Leds will switch off for 1 second.

7.3) Example of level one programming

The following examples show how to activate or deactivate a level one function, the "Condominium" function, for example, and prepare the "Gate Open Indicator" output in order to activate the electric lock.

Example of level one programming: activate the "Condominium" function and "Electric lock" output	Example
1. Access the level one programming mode by pressing P1 and P2, and keeping them pressed down for at least 3 seconds.	3s
2. Press P1 once to move the flashing Led to the Led 2 (the flashes will be short)	
3. Activate the "Condominium" function by pressing P2 (the flashes will be longer).	
4. Press P3 once in order to activate part two (the P3 LED will switch on)	
5. Press P1 once to move the flashing Led to the Led 2 (the flashes will be short)	
6. Activate the "Electric lock" output by pressing P2 (the flashes will be longer).	
7. Press P1 and P2 for at least 3 seconds to exit the programming mode and save modifications	3s

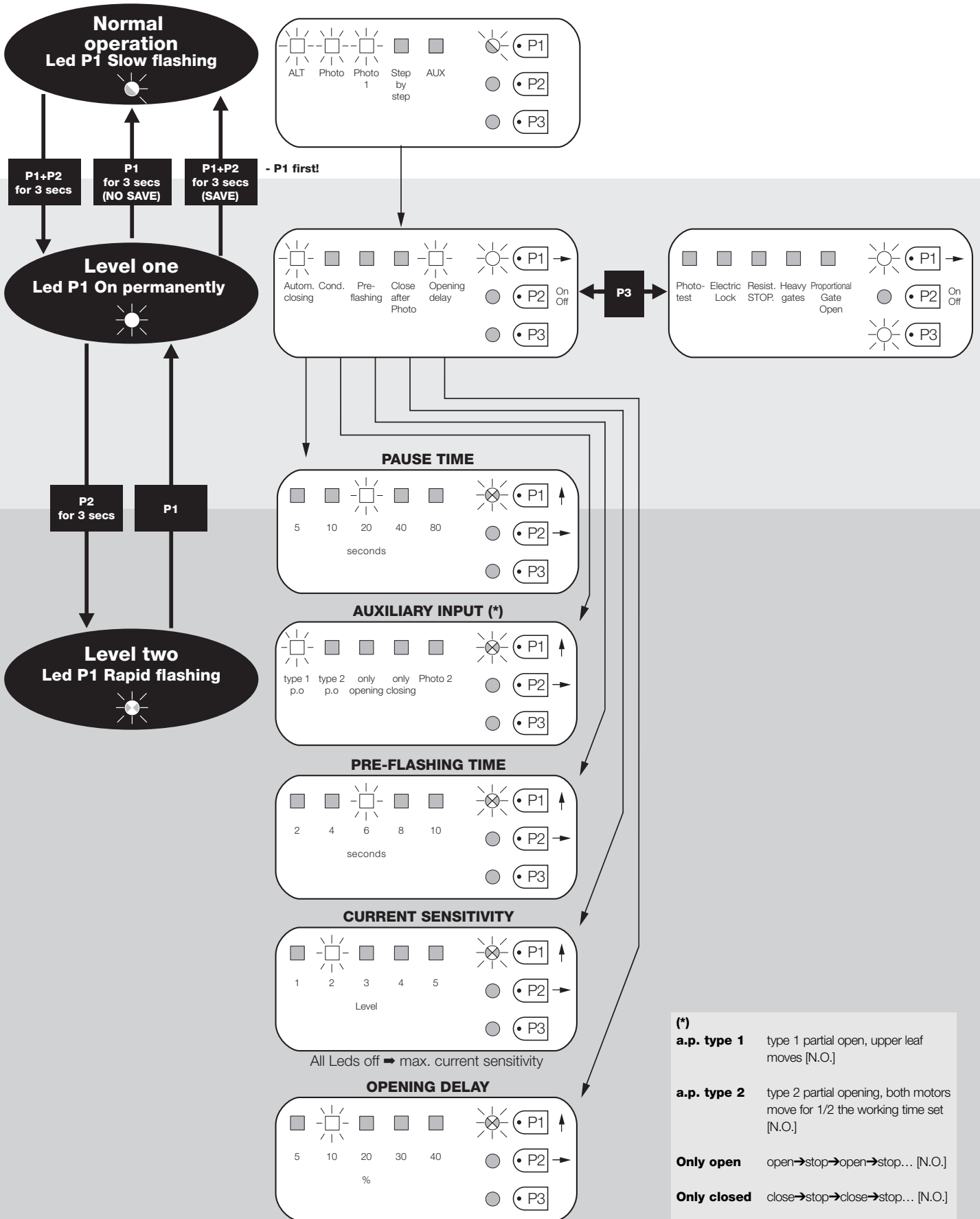
7.4) Example of level two programming

This example shows how to modify a level two parameter, for example, how to modify current sensitivity until "level 5".

Example of level two programming: modifying "current sensitivity"	Example
1. Access the level one programming mode by pressing P1 and P2 for at least 3 seconds	3s
2. Press P1 three times to move the flashing Led to the Led 4	
3. Access level two by pressing P2 for at least 3 seconds.	3s
4. Press P2 three times until Led 5 switches on	
5. Return to level one by pressing P1.	
6. Press P1 and P2 for at least 3 seconds to exit the programming mode and save modifications	3s

7.5) Programming diagram

The following figure shows the complete programming diagram of the functions and relative parameters. This figure also shows the functions and parameters either as they were initially or following total memory deletion.



8) Optional accessories

• “RADIO” Card

The control unit has a connector for fitting a 4 channel radio card complete with SM slot. This remote control device functions by means of transmitters which act on the inputs as per the following table:

Output Receiver	Control unit input
N° 1	STEP-BY-STEP
N° 2	AUX (reset value: Partially Open 1)
N° 3	“Open only”
N° 4	“Only close”

• PS124 Buffer Battery

PS124 buffer batteries can be used to supply the control unit in case of network blackouts.

9) POA1 control unit maintenance

As the POA1 control unit is electronic it requires no particular maintenance. However, at least every six months the efficiency of the entire

system must be checked according to the information described in the “Testing” chapter.

9.1) Disposal

This product is made from various kinds of material, some of which can be recycled. Make sure you recycle or dispose of the product in compliance with laws and regulations locally in force.

⚠ Some electric components may contain polluting substances; do not dump them.

10) What to do if...

This section will help fitters to solve some of the most common problems that may arise during installation.

No LEDs are on:

- Check whether the control unit is powered (measure a voltage of about 32Vdc at terminals 9-10).
- Check the 2 fuses, if not even the P1 Led is on or flashing a serious fault has probably occurred and the control unit must therefore be replaced.

The P1 LED flashes regularly but the INPUT LED's do not reflect the state of the respective inputs.

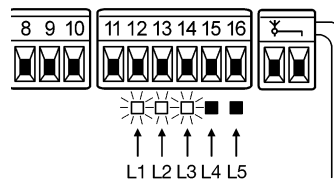
- Switch the unit off for the moment in order to exit a possible programming phase.
- Carefully check the connections on terminals 11 to 16.

The “Automatic search” procedure does not start up.

- The “Automatic search” procedure only starts if it has never been performed before or if the memory has been deleted. To check whether the memory is empty switch off the unit for a moment. When it is switched on again, all the Leds should flash rapidly for about 6 seconds. If they only flash for 3 seconds, the memory already contains valid values. If a new “Automatic search” is required, the memory must be completely deleted.

The “Automatic search” procedure has never been performed but it either does not start or it behaves incorrectly

- The system and all the safety devices must be operative in order to activate the “Automatic search” procedure.
- Make sure that no device connected to the inputs cuts in during the “Automatic search” procedure.
- In order for the “Automatic search” procedure to start correctly, the input Leds must be on as shown, the P1 Led must flash once a second.



The “Automatic search” procedure was performed correctly but the manoeuvre does not start

- Check that the safety device (STOP, PHOTO, PHOTO1 and, if installed, PHOTO2) Leds are on and that the relative command Led (STEP-BY-STEP or AUX) remains on for the entire duration of the command.
- If the “phototest” function is activated but the photocells do not function correctly, the DIAGNOSTICS LED indicates the fault by flashing four times.

The gate inverts the direction while moving

An inversion is caused by:

- The photocells triggering (PHOTO2 during the opening manoeuvre, PHOTO or PHOTO1 during the closing manoeuvre). In this case, check the photocell connections and input LEDs.
- The current sensitivity device triggers while the motors are moving (not near the mechanical stops, therefore). This is considered as an obstacle and causes an inversion. To find out if the current sensitivity device has triggered, count how many times the DIAGNOSTICS LED flashes: 1 flash indicates that the current sensitivity device triggered on account of motor M1, 2 flashes indicate that this was caused by motor M2.

11) Technical specifications

Power input	: POA1 Control unit → 230Vac ±10% 50-60Hz
	: POA1/V1 Control unit → 120Vac ±10% 50-60Hz
Max. absorbed power	: 170 VA
Emergency Electricity supply	: for PS124 buffer batteries
Maximum motor current	: 3A with a "level 6" current sensitivity cut in)
Service power output	: 24Vdc 200mA maximum current (the voltage can range from 16 to 33Vdc)
Phototest output	: maximum current 24Vdc 100mA (the voltage can range from 16 to 33Vdc)
Flashing lamp output	: for flashing lamp 24Vdc, maximum power 25W (the voltage can range from 16 to 33Vdc)
Gate open indicator output	: for indicator lamps at 24Vdc maximum power 5W (the voltage can range from 16 to 33Vdc) or electric locks 12Vac 25W
STOP Input	: for NC contacts or constant resistance 8,2K Ω +/- 25%
Working time	: automatic detection
Pause time	: programmable at 5, 10, 20, 40, 80 seconds
Pre-flashing time	: programmable at 2, 4, 6, 8, 10 seconds
Leaf delay in open cycle	: programmable at 5, 10, 20, 30 and 40 % of working time
Leaf delay in close cycle	: Automatic detection
2nd motor output	: for POP PP7224 motors
Maximum cable lengths	: electricity supply 30m
	: 2nd motor 15m
	: other inputs/outputs 50m
	: aerial 10m
Operating temperature	: -20÷50°C


smxi smif smxis radio receiver



Description of the product

SMXI, SMXIS and SMXIF are 4-channel radio receivers for control units equipped with SM-type connector.

The peculiarity of compatible transmitters is that the identification code is different for each transmitter. Therefore, in order to allow the receiver to recognise a determined transmitter, the recognition code must be memorised. This operation must be repeated for each transmitter required to communicate with the control unit.

 *Up to a maximum of 256 transmitters can be memorised in the receiver. No one transmitter can be cancelled; all the codes must be deleted. - For more advanced functions use the appropriate programming unit.*

The receiver features 4 outputs, all available on the underlying connector. To find out which function is performed by each output, see the control unit's instructions. During the transmitter code memorisation phase, one of these options may be chosen:

Mode I. Each transmitter button activates the corresponding output in the receiver, that is, button 1 activates output 1, button 2 activates output 2, and so on. In this case there is a single memorisation phase for each transmitter; during this phase, it doesn't matter which button is pressed and just one memory sector is occupied.

Mode II. Each transmitter button can be associated with a particular output in the receiver, e.g., button 1 activates output 2, button 2 activates output 1, and so on. In this case, the transmitter must be memorised, pressing the required button, for each output to activate. Naturally, each button can activate just one output while the same output can be activated by more than one button. One memory section is occupied for each button.

Installing the aerial

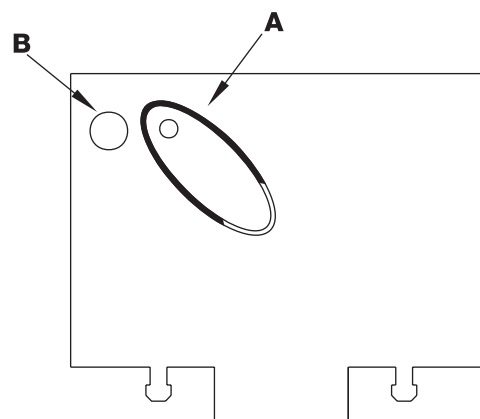
The receiver requires an ABF or ABFKIT type aerial to work properly; without an aerial the range is limited to just a few metres. The aerial must be installed as high as possible; if there are metal or reinforced concrete structures nearby you can install the aerial on top. If the cable supplied with the aerial is too short, use a coaxial cable with 50-Ohm impedance (e.g. low dispersion RG58), the cable must be no longer than 10 m.

If the aerial is installed in a place that is not connected to earth (masonry structures), the braid's terminal can be earthed to provide a larger range of action. The earth point must, of course, be local and of good quality. If an ABF or ABFKIT aerial cannot be installed, you can get quite good results using the length of wire supplied with the receiver as the aerial, laying it flat.

Memorising a remote control

⚠ When the memorisation phase is activated, any transmitter correctly recognised within the reception range of the radio is memorised. Consider this aspect with care and remove the aerial if necessary to reduce the capacity of the receiver.

The procedures for memorising the remote controls must be performed within a certain time limit; please read and understand the whole procedure before starting. In order to carry out the following procedure, it is necessary to use the button located on the box of the radio receiver (reference A, Fig. 1b), and the corresponding LED (reference B, Fig. 1b) to the left of the button.



1b

Table "B1"	Mode I memorising (All buttons are memorised on the related receiver output)	Example
1.	Press and hold down the receiver button for at least 3 seconds	3s
2.	Release the button when the Led lights up	
3.	Push, for at least 2 seconds, any of the buttons of the transmitter to be memorised within 10 seconds	2s
N.B.: If the procedure was memorised correctly, the Led on the receiver will flash 3 times. If there are other transmitters to memorise, repeat step 3 within another 10 seconds. The memorisation phase finishes if no new codes are received for 10 seconds.		x3

Table "B2"	Mode II memorising (A specific receiver output can be associated to each button)	Example
1.	Press and release the receiver button as many times as the number of the desired output (Once for output No. 1, twice for output No. 2)	
2.	Check that the LED emits the same number of flashes as the desired output, repeated over 10 seconds in regular intervals (1 flash if output No. 1, 2 flashes if output No. 2)	
3.	Within 10 seconds press the desired button on the transmitter to be memorised, holding it down for at least 2 seconds.	2s
N.B.: If the procedure was memorised correctly, the Led on the receiver will flash 3 times. If there are other transmitters to memorise, repeat step 3 within another 10 seconds. The memorisation phase finishes if no new codes are received for 10 seconds.		x3

Remote memorising








It is possible to enter a new transmitter in the receiver memory without using the keypad. A previously memorised and operational remote control must be available. The new transmitter will "inherit" the characteristics of the previously memorised one. Therefore, if the first transmitter is memorised in mode I, the new one will also be memorised in mode I and any of the buttons of the transmitter can be pressed. If the first transmitter is memorised in mode II the new one will also be memorised in mode II but the button activating the

required output must be pressed on the first transmitter as must the button required to be memorised on the second. You need to read all the instructions in advance so you can perform the operations in sequence without interruptions. Now, with the two remote controls (the NEW one requiring code memorisation and the OLD one that is already memorised), position yourself within the operating range of the radio controls (within maximum range) and carry out the instructions listed in the table.

Table "B3"	Remote Memorising	Example
1.	Press the button on the NEW transmitter for at least 5 seconds and then release	x5s
2.	Press the button on the OLD transmitter 3 times slowly	1s 1s 1s
3.	Press the button on the NEW transmitter slowly and then release	x1
N.B.: If there are other transmitters to memorise, repeat the above steps for each new transmitter		

Deleting all transmitters

All the memorised codes can be deleted as follows:

Table "B4"	Deleting all transmitters	Example
1.	Press the receiver button and hold it down	
2.	Wait for the Led to light up, then wait for it to switch off and then wait for it to flash 3 times	   x3
3.	Release the button exactly during the third flash	  3°
N.B.: if the procedure was performed correctly, the Led will flash 5 times after a few moments.		 x5

Technical characteristics

Receivers			
	SMXI	SMXIS	SMXIF
Decoding	Rolling code 52 bit FLOR	Rolling code 64 bit SMILO	1024 FLO combinations
Transmitter compatibility	FLOR, VERY VR	SMILO	FLO, VERY VE
Frequency	433.92MHz		
Input impedance	52ohm		
Outputs	4 (on connector SMXI)		
Sensitivity	better than 0.5µV		
Working temp.	-10°C ÷ + 55°C		

Transmitters					
	FLOR	VERY VR	FLO	VERY VE	SMILO
Buttons	1 - 2 - 4	2	1 - 2 - 4	2	2 - 4
Power input	12Vdc Batt. 23A	6Vdc lithium batt.	12Vdc Batt. 23°	6Vdc lithium batt.	12Vdc Batt. 23A
Absorption	10mA	10mA	15mA	10mA	25mA
Frequency	433.92MHz				
Working temp.	-40°C ÷ + 85°C				
Radiated power	100µW				

Dichiarazione CE di conformità / EC declaration of conformity

(secondo Direttiva 98/37/EC, Allegato II, parte B) (according to 98/37/EC Directive, Enclosure II, part B)

Numero / Number: 173/PP7024

Data / Date: 5/2003

Revisione / Revision: 0

Il sottoscritto Lauro Buoro, Amministratore Delegato, dichiara che il prodotto:

The undersigned Lauro Buoro, General Manager, declares that the product:

Nome produttore / Name of produce : NICE s.p.a.

Indirizzo / Address : Via Pezza Alta 13, 31046 Z.I. Rustignè - ODERZO - ITALY

Tipo / Type : Motoriduttore elettromeccanico "PP7024" con centrale / Electromechanical gearmotor "PP7024" with control unit

Modello / Model : PP7024

Accessori / Accessories : Ricevente radio mod. SMXI / mod. SMXI radio receiver

Risulta conforme a quanto previsto dalle seguenti direttive comunitarie / Complies with the following community directives

Riferimento n° Reference n°	Titolo Title
73/23/CEE	DIRETTIVA 73/23/CEE DEL CONSIGLIO del 19 febbraio 1973 concernente il riavvicinamento delle legislazioni degli Stati membri relative al materiale elettrico destinato ad essere adoperato entro taluni limiti di tensione / Council Directive 73/23/EEC of 19 February 1973 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits
89/336/CEE	DIRETTIVA 89/336/CEE DEL CONSIGLIO del 3 maggio 1989, per il riavvicinamento delle legislazioni degli Stati membri relative alla compatibilità elettromagnetica / Council Directive 89/336/EEC of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility
98/37/CE (EX 89/392/CEE)	DIRETTIVA 98/37/CE DEL PARLAMENTO EUROPEO E DEL CONSIGLIO del 22 giugno 1998 concernente il ravvicinamento delle legislazioni degli Stati membri relative alle macchine/DIRECTIVE 98/37/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 22 June 1998 on the approximation of the laws of the Member States relating to machinery

Risulta conforme a quanto previsto dalle seguenti Norme armonizzate / Complies with the following Harmonised standards

Riferimento n° Reference no	Edizione Issue	Titolo Title	Livello di valutazione Estimate level	Classe Class
EN60335-1	04/1998	Sicurezza degli apparecchi elettrici d'uso domestico e similare - Norme generali. Safety of household and similar electrical appliances - General requirements		
EN60204-1	09/1993	Sicurezza del macchinario-Equipagg. elettrico delle macchine-Parte 1:Reg.generali Safety of machinery-Electrical equipment of machines-Part 1:General requirements		
EN55022	09/1998	Apparecchi per la tecnologia dell'informazione.Caratteristiche di radiodisturbo. Limiti e metodi di misura / Information technology equipment - Radio disturbance characteristics Limits and methods of measurement		B
EN55014-1	04/1998	Compatibilità elettromagnetica - Prescrizioni per gli elettrodomestici, gli utensili elettrici e gli apparecchi similari.Parte 1: Emissione- Norma di famiglia di prodotti / Electromagnetic Compatibility - Requirements for Household Appliances, Electric Tools and Similar Apparatus - Part 1: Emission - Product Family Standard		
ENV50204	04/199	Parti 2-3: Armoniche/Flicker / Parts 2-3: Harmonic/FlickerA	10V/m	A
EN61000-4-2	09/1996	Compatibilità elettromagnetica (EMC) / Electromagnetic compatibility (EMC) Parte 4: Tecniche di prova e di misura / Part 4: Testing and measurement techniques		
EN61000-4-3	11/1997	Parte 2: Prove di immunità a scarica elettrostatica Part 2: Electrostatic discharge immunity test	4KV, 8KV	B
EN61000-4-4	09/1996	Parte 3: Prova d'immunità sui campi irradiati a radiofrequenza Part 3: Radiated, radio-frequency, electromagnetic field immunity test	10V/m	A
EN61000-4-4	09/1996	Parte 4: Test sui transienti veloci/ immunità ai burst Part 4: Electrical fast transient/burst immunity test.	2KV	B
EN61000-4-5	06/1997	Parte 5: Prova di immunità ad impulsi Part 5: Surge immunity test	2KV, 1KV	B
EN61000-4-6	11/1997	Parte 6: Immunità ai disturbi condotti, indotti da campi a radiofrequenza Part 6: Immunity to conducted disturbances, induced by radio-frequency fields.	10V	A
EN61000-4-8	06/1997	Parte 8: Prova di immunità a campi magnetici a frequenza di rete Part 8: Power frequency magnetic field immunity test.	30A/m	A
EN61000-4-11	09/1996	Parte 11: Prove di immunità a buchi di tensione, brevi interruzioni e variazioni di tensione Part 11: Voltage dips, short interruptions and voltage variations immunity tests		B-C

Risulta conforme a quanto previsto dalle altre norme e/o specifiche tecniche di prodotto / Complies with the other standards and/or product technical specifications

Riferimento n° Reference no	Edizione Issue	Titolo Title
EN 12445	08/2000	Porte e cancelli industriali e commerciali e da autorimessa. Sicurezza in uso di porte motorizzate - Metodi di prova Industrial, commercial and garage doors and gates - Safety in use of power operated doors - Test methods
EN 12453	08/2000	Porte e cancelli industriali e commerciali e da autorimessa. Sicurezza in uso di porte motorizzate - Requisiti Industrial, commercial and garage doors and gates - Safety in use of power operated doors - Requirements

Inoltre dichiara che non è consentita la messa in servizio del prodotto suindicato finché la macchina, in cui il prodotto stesso è incorporato, non sia identificata e dichiarata conforme alla direttiva 98/37/CE/ The above-mentioned product cannot be used until the machine into which it is incorporated has been identified and declared to comply with the 98/37/CE directive.

Il prodotto suindicato si intende parte integrante di una delle configurazioni di installazione tipiche, come riportato nei nostri cataloghi generali.

The above product is an integral part of one of the typical installation configurations as shown in our general catalogues.

ODERZO, 8 Maggio 2003

Amministratore delegato
(General Manager)
Lauro Buoro

P.S.: La dichiarazione del modello "PP7224" è presente nel fascicolo di istruzioni del motore "PP7224"
"Please find the declaration of conformity for model "PP7224" in the instruction booklet for the "PP7224"



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