

# Robus

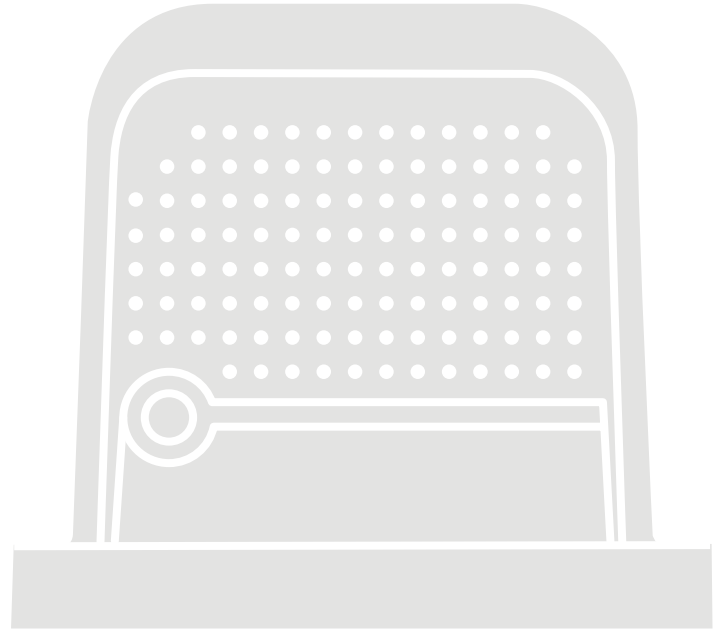
CE 0682

EAC

UK  
CA



RBS400  
RBS600  
RBS600HS



## Gearmotor for sliding gates

EN - Instructions and warnings for installation

Nice

## CONTENTS

<b>1</b>	<b>GENERAL SAFETY WARNINGS AND PRECAUTIONS . . . . .</b>	<b>3</b>	<b>9</b>	<b>TROUBLESHOOTING GUIDE . . . . .</b>	<b>38</b>
1.1	General warnings . . . . .	3	9.1	Troubleshooting . . . . .	38
1.2	Installation warnings . . . . .	3	9.2	Replacing the motor control card . . . . .	39
<b>2</b>	<b>PRODUCT DESCRIPTION . . . . .</b>	<b>5</b>	9.3	Signalling through warning light . . . . .	40
2.1	List of constituent parts . . . . .	5	9.4	Signals on the control unit . . . . .	40
<b>3</b>	<b>INSTALLATION . . . . .</b>	<b>6</b>	9.5	Luminous signals . . . . .	40
3.1	Pre-installation checks . . . . .	6	9.5.1	Status light . . . . .	40
3.2	Product usage limits . . . . .	6	9.5.2	Control unit LED . . . . .	41
3.3	Product identification and overall dimensions . . . . .	8	9.6	Radio diagnostics . . . . .	43
3.4	RECEIPT OF THE PRODUCT . . . . .	8	9.7	Anomaly log . . . . .	44
3.5	Pre-installation works . . . . .	9	<b>10</b>	<b>FURTHER DETAILS (Accessories) . . . . .</b>	<b>45</b>
3.6	Installing the gearmotor . . . . .	10	10.1	Adding or removing devices . . . . .	45
3.7	Manually unlocking and locking the gearmotor . . . . .	14	10.1.1	BlueBUS . . . . .	45
<b>4</b>	<b>ELECTRICAL CONNECTIONS . . . . .</b>	<b>15</b>	10.1.2	STOP input . . . . .	45
4.1	Preliminary checks . . . . .	15	10.1.3	I/O expansion board (optional accessory) . . . . .	45
4.2	Removing the control unit . . . . .	15	10.1.4	I/O expansion board (optional accessory) . . . . .	45
4.3	Wiring diagram and description of connections . . . . .	16	10.1.5	Learning of other devices . . . . .	46
4.3.1	Wiring diagram . . . . .	16	10.1.7	Courtesy light . . . . .	46
4.3.2	Description of connections . . . . .	16	10.1.6	Connecting an SM-type radio receiver (optional accessory) . . . . .	46
4.3.3	Using the control unit buttons . . . . .	17	10.1.8	Relay photocells with PHOTOTEST function . . . . .	47
4.4	Addressing of devices connected with the BlueBUS system . . . . .	17	10.1.9	Relay photocells without PHOTOTEST function . . . . .	48
4.4.1	FT210B photosensor . . . . .	18	10.1.10	Electric lock . . . . .	49
4.5	"Slave" mode . . . . .	19	10.2	Connecting and installing the emergency power supply . . . . .	49
<b>5</b>	<b>FINAL CHECKS AND START-UP . . . . .</b>	<b>20</b>	10.3	Connecting the Oview programmer . . . . .	50
5.1	Power supply connection . . . . .	20	10.4	Connecting other devices . . . . .	50
5.2	Device learning . . . . .	21	10.4.1	EPMOB photocells and ELMM courtesy light . . . . .	51
5.3	Leaf length learning . . . . .	21	<b>11</b>	<b>TECHNICAL SPECIFICATIONS . . . . .</b>	<b>54</b>
5.3.1	Preliminary checks . . . . .	21	<b>12</b>	<b>CONFORMITY . . . . .</b>	<b>56</b>
5.3.2	Leaf length learning operations . . . . .	22	<b>13</b>	<b>PRODUCT MAINTENANCE . . . . .</b>	<b>57</b>
5.4	Checking the automation's movement . . . . .	23	<b>14</b>	<b>PRODUCT DISPOSAL . . . . .</b>	<b>57</b>
5.5	Inverting the direction of motor rotation . . . . .	23	<b>INSTRUCTIONS AND WARNINGS . . . . .</b>	<b>58</b>	
<b>6</b>	<b>TESTING AND COMMISSIONING . . . . .</b>	<b>24</b>	<b>15</b>	<b>PARAMETERS AND PROGRAMMABLE FUNCTIONS . . . . .</b>	<b>60</b>
6.1	Testing . . . . .	24	15.1	Key to the symbols . . . . .	60
6.2	Commissioning . . . . .	24	15.2	Common parameters . . . . .	60
<b>7</b>	<b>RADIO PROGRAMMING . . . . .</b>	<b>25</b>	15.3	Installation parameters . . . . .	61
7.1	Radio programming description . . . . .	25	15.4	Basic parameters . . . . .	62
7.1.1	Procedure for memorising transmitter buttons . . . . .	25	<b>16</b>	<b>AVAILABLE COMMANDS . . . . .</b>	<b>67</b>
7.2	Verifying transmitter encoding . . . . .	27	16.1	Basic commands . . . . .	67
7.3	Memorisation of a radio command . . . . .	27	16.2	Extended commands . . . . .	67
7.3.1	Memorisation in "Mode 1" . . . . .	27	<b>17</b>	<b>COMMAND CONFIGURATION . . . . .</b>	<b>68</b>
7.3.2	Memorisation in "Mode 2" . . . . .	28	17.1	Standard configuration . . . . .	68
7.3.3	Memorising a new transmitter "near the receiver" . . . . .	28	17.2	Configuration of the safety functions . . . . .	69
7.3.4	Memorising a new transmitter using the "enabling code" of an old transmitter already memorised in the receiver . . . . .	28	17.3	Control mode description . . . . .	69
7.4	Deleting a radio command . . . . .	29	<b>18</b>	<b>INPUT CONFIGURATION . . . . .</b>	<b>71</b>
7.4.1	Deleting a single command associated with a button from the receiver's memory . . . . .	29	<b>19</b>	<b>OUTPUT CONFIGURATION . . . . .</b>	<b>72</b>
7.4.2	Deleting the receiver's memory (fully) . . . . .	29	19.1	Control unit output configuration . . . . .	72
7.4.3	Locking (or release) of memorisations carried out with the "near the control unit" procedure and/or through the "enabling code" . . . . .	30	19.2	Output configuration - expansion modules . . . . .	73
<b>8</b>	<b>PROGRAMMING THE CONTROL UNIT . . . . .</b>	<b>31</b>			
8.1	Using the programming buttons . . . . .	31			
8.2	Level 1 programming (ON-OFF) . . . . .	32			
8.2.1	Level 1 programming procedure . . . . .	32			
8.3	Level 2 programming (adjustable parameters) . . . . .	33			
8.3.1	Level 2 programming procedure . . . . .	33			
8.4	Special functions . . . . .	35			
8.4.1	"Always open" function . . . . .	35			
8.4.2	"Move anyway" function . . . . .	35			
8.4.3	"Maintenance notice" function . . . . .	35			
8.5	Wi-Fi connection . . . . .	35			
8.5.1	Integrated Wi-Fi module (depending on the version) . . . . .	35			
8.5.2	BiDi-Wi-Fi interface . . . . .	36			
8.6	Connecting the Pro-View . . . . .	37			
8.7	Z-Wave™ . . . . .	37			
8.8	Memory deletion . . . . .	37			

## 1.1 GENERAL WARNINGS



**WARNING! Important safety instructions. Observe all the instructions as improper installation may cause serious damages.**



**WARNING! Important safety instructions. It is important to comply with these instructions to ensure personal safety. Store these instructions carefully.**

**WARNING! Please abide by the following warnings:**

- Before commencing the installation, check the "Product technical specifications", in particular whether this product is suitable for automating your guided part. Should it not be suitable, do NOT proceed with the installation.
- The product cannot be used before it has been commissioned as specified in the "Testing and commissioning" chapter.



**According to the latest European legislation, an automated device must be constructed in conformity to the harmonised rules specified in the current Machinery Directive, which allow for declaring the presumed conformity of the automation. Consequently, all the operations for connecting the product to the mains electricity, its commissioning and maintenance must be carried out exclusively by a qualified and expert technician.**

- Before proceeding with the product's installation, check that all the materials are in good working order and suited to the intended applications.
- The product is not intended for use by persons (including children) with reduced physical, sensory or mental capacities, nor by anyone lacking sufficient experience or familiarity with the product.
- Children must not play with the appliance.
- Do not allow children to play with the product's control devices. Keep the remote controls out of reach of children.



**In order to avoid any danger from inadvertent resetting of the thermal cut-off device, this appliance must not be powered through an external switching device, such as a timer, or connected to a supply that is regularly powered or switched off by the circuit.**

- The system's power supply network must include a disconnection device (not supplied) with a contact opening gap permitting complete disconnection under the conditions envisaged by Overvoltage Category III.
- Handle the product with care during installation, taking care to avoid crushing, denting or dropping it, or allowing contact with liquids of any kind. Keep the product away from sources of heat and naked flames. Failure to observe the above can damage the product, and increase the risk of danger or malfunction. Should this happen, stop installation immediately and contact Customer Service.

- The manufacturer declines all liability for damages to property, objects or people resulting from failure to observe the assembly instructions. In such cases, the warranty for material defects shall not apply.
- The weighted sound pressure level of the emission A is lower than 70 dB(A).
- Cleaning and maintenance reserved for the user must not be carried out by unsupervised children.
- Before intervening on the system (maintenance, cleaning), always disconnect the product from the mains power supply and from any batteries.
- Inspect the system frequently, in particular the cables, springs and supports to detect any imbalances and signs of wear or damage. Do not use the product if it needs to be repaired or adjusted, because defective installation or incorrect balancing of the automation can lead to injuries.
- The packing materials of the product must be disposed of in compliance with local regulations.
- Keep persons away from the gate when it is manoeuvred using the control elements.
- When operating the gate, keep an eye on the automated mechanism and keep all bystanders at a safe distance until the movement has been completed.
- Do not operate the product if anyone is working nearby; disconnect its power supply before permitting such work to be done.
- If the power cable is damaged, it must be replaced by the manufacturer or by an appointed servicing company or similarly qualified person in order to prevent any form of risk.
- Warning! Transport the product using the relevant hand trolley and the handles on the package to ensure that the operations are conducted safely.

## 1.2 INSTALLATION WARNINGS

- Prior to installing the drive motor, check that the door is in good working order, correctly balanced and that it opens and closes properly.
- Before installing the drive motor, remove all unnecessary ropes or chains and deactivate any equipment not required for motorised operation, such as locking devices.
- If the gate being automated has a pedestrian gate, the system must be equipped with a control device that inhibits the motor's operation when the pedestrian gate is open
- Install the manoeuvre device for manual unlocking at less than 1.8 m above the ground. NOTE - If removable, the manoeuvre device must be kept next to the door when removed.
- Make sure that the control elements are kept far from moving parts but nonetheless directly within sight. Unless a selector is used, the control elements must be installed at least 1.5 m above the ground and must not be accessible.

- If the opening movement is controlled by a fire-sensing system, make sure that any windows larger than 200 mm are closed using the control elements.
- Prevent and avoid any form of entrapment between the moving and fixed parts during the manoeuvres.
- Permanently affix the label concerning the manual manoeuvre near its actuating element.
- After installing the drive motor, make sure that the mechanism, protective system and all manual manoeuvres function properly.
- Doors and vertical gates require an anti-fall function or device
- For drive motors that allow for accessing unprotected moving parts once they have been installed, such parts must be installed at least 2.5 m above the floor or other surface from which they can be accessed.
- Make sure to avoid any entanglements due to the opening movement of the driven part.
- After the installation, make sure that the mechanism is correctly adjusted and that the protection system and the manual release device (if present) work properly.

#### **Battery-operated appliances**

- The appliance must be disconnected from the power supply when removing the batteries.
- The batteries must be removed from the appliance prior to its disposal.
- The batteries must be safely disposed of.
- If the batteries are not rechargeable, do not replace them with rechargeable batteries.

#### **Appliances with LED light**

- Looking at LED lights from close up and for prolonged periods can cause dazzling. It may temporarily reduce eyesight and cause accidents.
- Avoid looking at LEDs directly.

#### **Appliances with radio device**

- The manufacturer of this appliance, Nice S.p.A., hereby declares that the product complies with Directive 2014/53/EU.
- The instruction manual and the full text of the EU Declaration of Conformity are available at the following Internet address: [www.niceforyou.com](http://www.niceforyou.com), under the "support" and "download" sections
- For transmitters: 433 MHz: ERP < 10 dBm - 868 MHz: ERP < 14 dBm; for receivers: 433 MHz, 868 MHz.

## 2 PRODUCT DESCRIPTION

**ROBUS** is a range of irreversible electromechanical gearmotors designed for automating sliding gates.

They are equipped with an electronic control unit and an “SM”-type snap-on connector for OXI or OXIBD receivers (refer to the “**Connecting an SM-type radio receiver (optional accessory)**” paragraph).

Electrical connections to external devices are simplified thanks to the use of the “BlueBus”, a technique that allows for connecting multiple devices with only 2 wires.

**ROBUS** works with electricity. In the event of a power outage, it is possible to unlock the device using a suitable key and manually move the gate or use the optional PS124 back-up battery accessory that allows for completing certain manoeuvres even when there is no mains power.



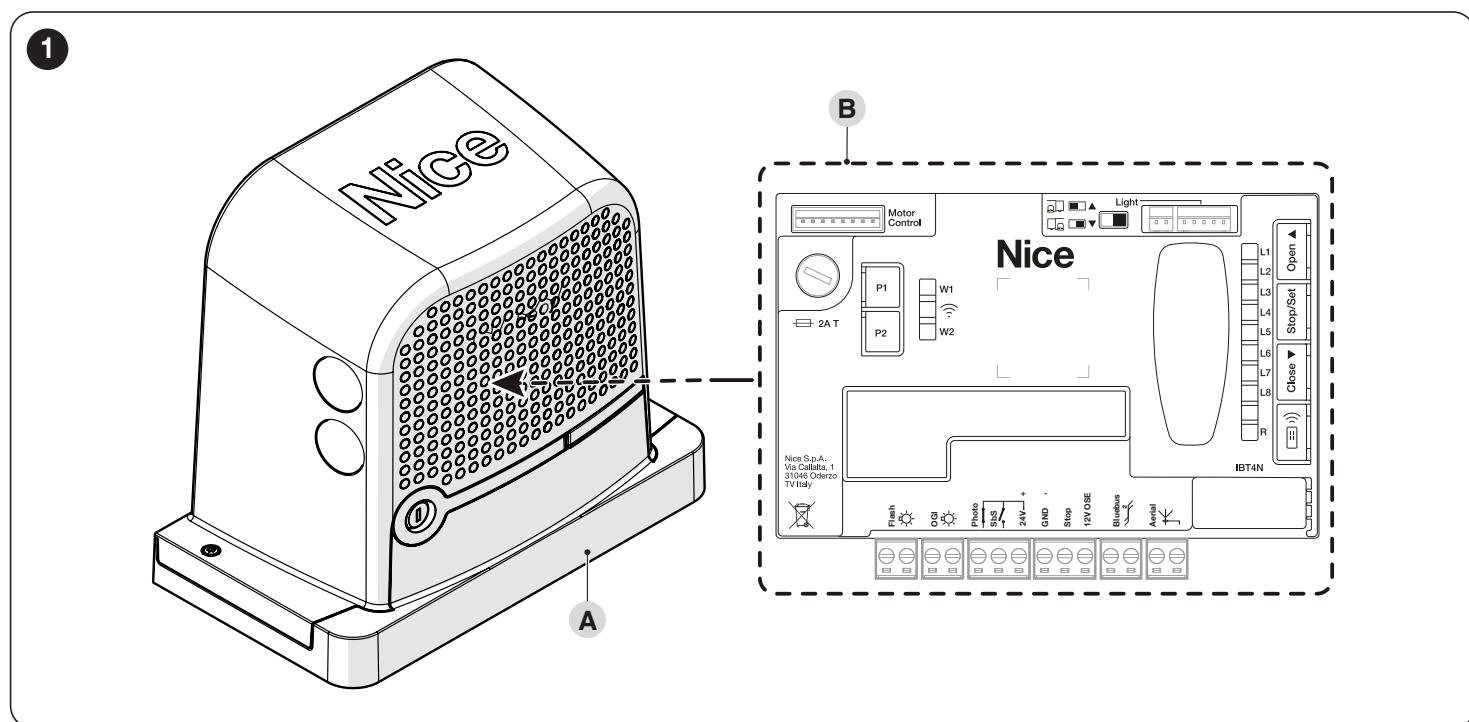
**All uses other than that described herein and use in environmental conditions other than those indicated in this manual are considered improper and forbidden!**

Table 1

COMPARISON OF BASIC CHARACTERISTICS OF ROBUS GEARMOTORS			
	ROBUS 400	ROBUS 600	ROBUS 600 HS
Gate leaf limit (m)	8	8	8
Weight limit (kg)	400	600	600
Power supply (V)	230 (RB400) 120 (RB400/V1) 250 (RB400/AU01)	230 (RB600) 120 (RB600/V1) 250 (RB600/AU01)	230 (RB600HS) 120 (RB600HS/V1) 250 (RB600HS/AU01)
Power draw (A)	1,1	2,1	3,1
Power (W)	250	450	450
Speed (m/s)	0,34	0,34	0,44
Start peak torque (Nm) corresponding to a force (N)	9,3 310	9,3 310	9,3 310
Rated torque (Nm) corresponding to a force (N)	3,6 120	9 300	5,9 196
Cycles (cycles/hour) - gate leaf length up to 4 m - gate leaf length up to 8 m	35 20	40 20	40 20
Protection rating (IP)	44	44	44
Ambient operating temperature (°C)	-20...+55	-20...+55	-20...+55
Dimensions (mm)	340 x 220 x 303 h	340 x 220 x 303 h	340 x 220 x 303 h
Weight (kg)	11,2	11,2	11,2
Control unit	MCU1	MCU1	MCU4

### 2.1 LIST OF CONSTITUENT PARTS

“Figure 1” shows the main parts making up **ROBUS**.



- A Gearmotor body
- B Control unit

## 3 INSTALLATION

### 3.1 PRE-INSTALLATION CHECKS



**The installation must be carried out by qualified personnel in compliance with the current legislation, standards and regulations, and with the instructions provided in this manual.**

Before proceeding with the product's installation, it is necessary to:

- Check the integrity of the supply
- Check that all the materials are in good working order and suitable for the intended use
- Make sure that the structure of the sliding gate is suitable for being automated
- Make sure that the characteristics of the sliding gate fall within the operating limits specified in the "**Product usage limits**" paragraph (page 6)
- Verify that there are no points of greater friction during the opening and closing movements along the entire path of the sliding gate
- Verify that the area where the gearmotor is installed allows for unlocking the latter and manoeuvring easily and safely
- Verify that there is no risk of derailment of the leaf or that it may come off the guides
- Make sure that the overrun mechanical stops are sturdy enough and that there is no risk of the deformation even when the leaf strikes the mechanical stop vigorously
- Verify that the gate leaf is well balanced: it must not move by itself when left in any position
- Make sure that the area where the gearmotor is fixed is not subject to flooding. If necessary, mount the gearmotor raised from the ground
- Verify that the mounting points of the various devices are protected against impacts and that the mounting surfaces are sufficiently sturdy
- Components must never be immersed in water or other liquids
- Keep the product away from heat sources and open flames and acid, saline or potentially explosive atmospheres; these may damage the product and cause malfunctions or dangerous situations
- Connect the control unit to an electricity supply line equipped with a safety earthing system
- If there is an access door in the gate, or within its range of movement, make sure that it does not obstruct the gate's normal path; install an appropriate interlock system if necessary
- The power line must be protected by an adequate residual-current device
- Mount a device on the electric power line that completely disconnects the automation from the grid. The disconnection device must have contacts with a sufficient gap to ensure complete disconnection, under the Category III overvoltage conditions, in accordance with the installation instructions. Should it be necessary, this device guarantees fast and safe disconnection from the power supply; it must therefore be positioned in view of the automation. If placed in a non-visible location, it must have a system that blocks any accidental or unauthorised reconnection of the power supply, in order to prevent dangerous situations. The disconnection device is not supplied with the product.

### 3.2 PRODUCT USAGE LIMITS

The data relative to the product's performances is included in the "**TECHNICAL SPECIFICATIONS**" chapter (page 54) and is the only data that allows for properly assessing whether the product is suitable for its intended use.

Check the application limits of **ROBUS** and of the accessories to be installed, assessing whether their characteristics are capable of meeting the requirements of the environment and the limitations specified below:

- the weight of the sliding gate leaf must not exceed the limit specified in "**Table 2**".
- The length of the sliding gate leaf must not exceed 8 m.

**Table 2**

<b>ROBUS - LIMITATIONS OF USE IN RELATION TO THE TYPE OF MODEL</b>			
	<b>ROBUS 400</b>	<b>ROBUS 600</b>	<b>ROBUS 600 HS</b>
<b>Gate leaf limit (m)</b>	8	8	8
<b>Weight limit (kg)</b>	400	600	600

The measurements shown in "**Table 2**" are purely indicative and are only needed for making a rough estimate. The actual suitability of **ROBUS** to automate a specific sliding gate depends on friction and on other factors, even occasional, such as the presence of frost, which may interfere with the leaf's movement.

To determine the actual conditions, the force required to move the leaf throughout its path must be measured, to ensure that this value does not exceed half the "rated torque" specified in the "**TECHNICAL SPECIFICATIONS**" chapter (page 54).

A margin of 50% is recommended because adverse weather conditions can increase friction

"**Table 3**" (page 7) includes an estimate of the "durability", that is, the average economic life of the product. The durability value is strongly influenced by the severity of the manoeuvres, i.e. the sum of all factors that contribute to product wear. To make the estimate it is necessary to add all the severity indices of the "**Table 3**". Check the total against the estimated durability graph.

For example, **ROBUS 400** on a 200 kg gate that is 5 metres long, without any other fatigue-inducing factors, obtains a severity index of 50% (30+20). An estimated duration of 80.000 cycles can be inferred from the graph.



**The control unit is equipped with a manoeuvre limiting device that prevents possible overheating; it is based on the motor load and duration of the cycles, and intervenes when the maximum limit is exceeded.**

**Table 3**

<b>ESTIMATED DURABILITY IN RELATION TO THE MANOEUVRE SEVERITY INDEX</b>			
Severity index %	ROBUS 400	ROBUS 600	ROBUS 600 HS
<b>Weight of the leaf (kg)</b>			
Up to 200	30	10	20
200 ÷ 400	60	30	30
400 ÷ 500	-	40	40
500 ÷ 600	-	60	60
<b>Leaf length (m)</b>			
Up to 4	10	15	15
4 ÷ 6	20	25	25
6 ÷ 8	35	40	40
<b>Other factors contributing to fatigue (to be considered if their probability exceeds 10%)</b>			
Ambient temperature greater than 40°C or below 0°C, or humidity greater than 80%	10	10	10
Presence of dust and sand	15	15	15
Presence of salinity	20	20	20
Manoeuvre interrupted by photocell	15	20	20
Manoeuvre interrupted by Stop	25	30	30
Speed greater than "L4 fast"	20	25	25
Active surge	25	25	25
<b>Total severity index %:</b>			

Indice di gravosità %	Durability in cycles
10%	260,000
20%	180,000
30%	130,000
40%	100,000
50%	80,000
60%	65,000
70%	55,000
80%	48,000
90%	42,000
100%	38,000

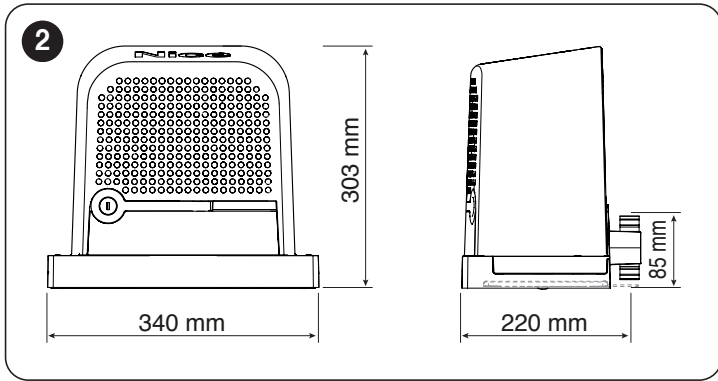
Durability in cycles

Indice di gravosità %

Note: a severity index exceeding 100% implies that the conditions are beyond the limit of acceptability; in this case, a larger-size model is recommended.

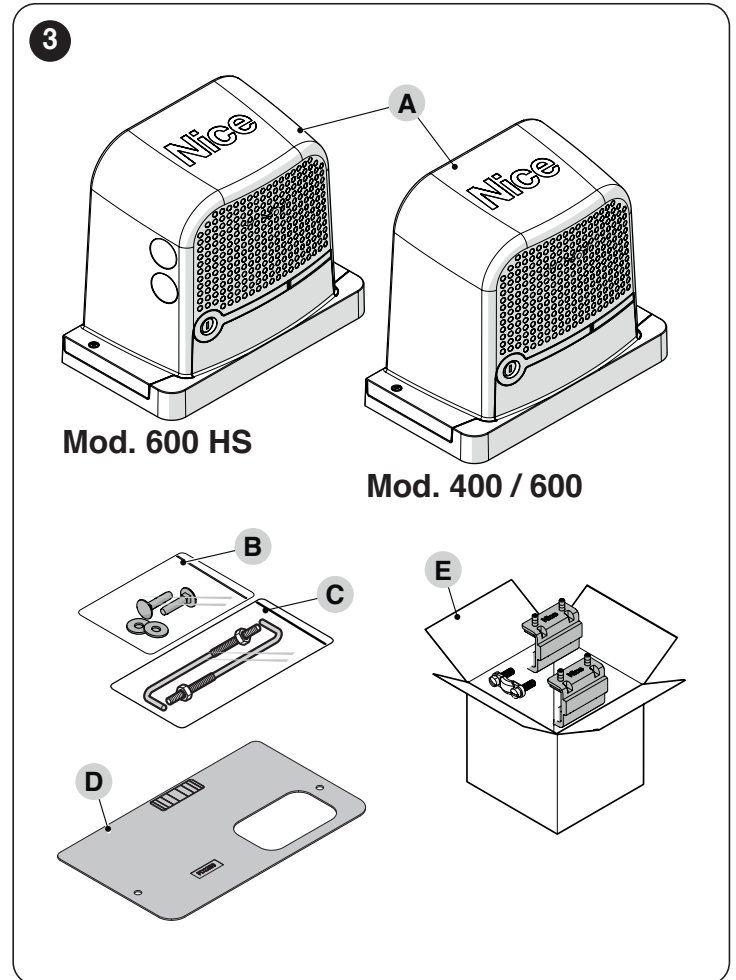
### 3.3 PRODUCT IDENTIFICATION AND OVERALL DIMENSIONS

The overall dimensions of the product are shown in "Figure 2".



### 3.4 RECEIPT OF THE PRODUCT

All the components contained in the kit are illustrated and listed below.

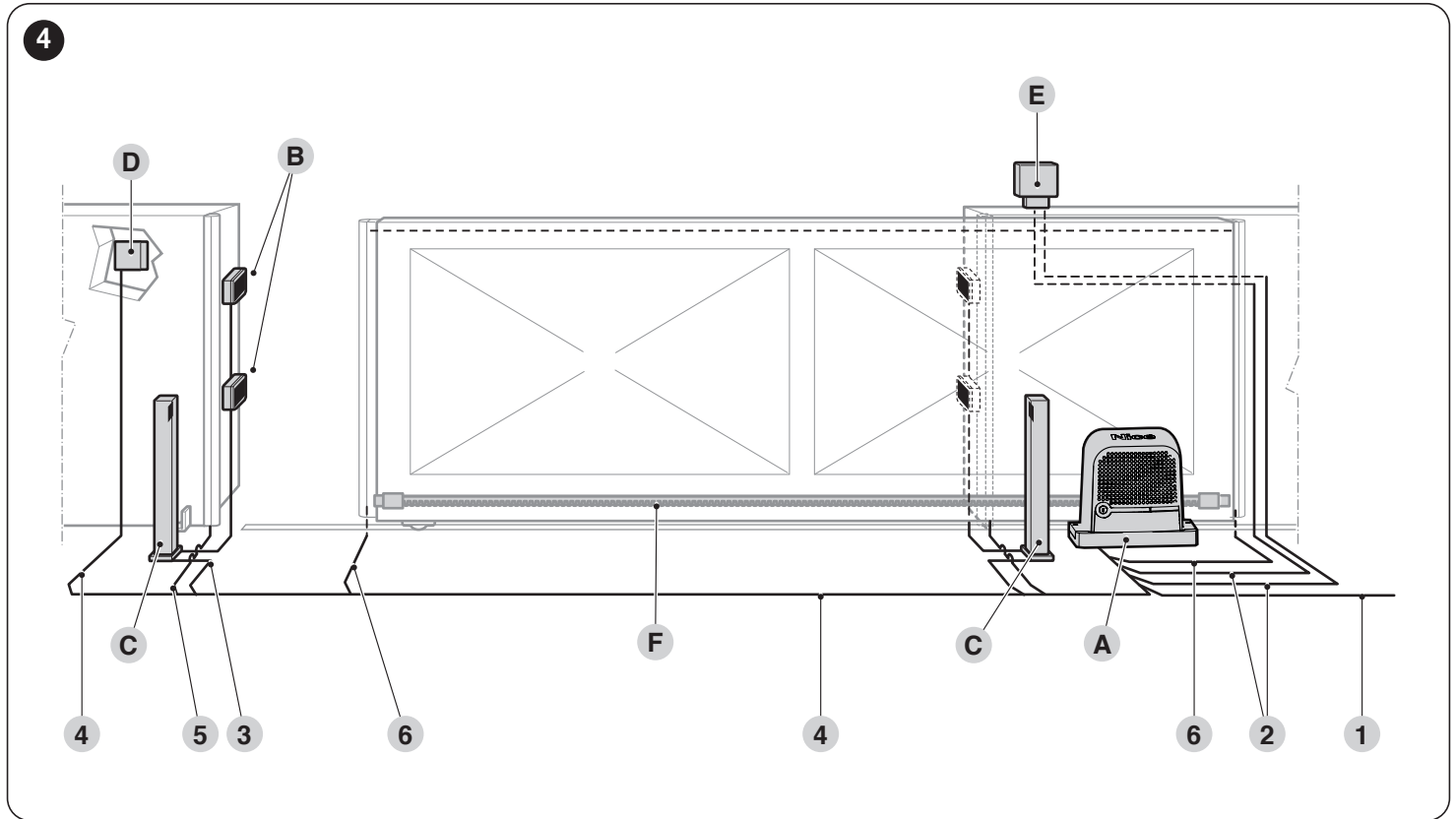


- A** Gearmotor
- B** Metal hardware (screws, washers, etc.)
- C** Anchor bolts
- D** Foundation plate
- E** Accessory box



### 3.5 PRE-INSTALLATION WORKS

The figure shows an example of an automation system, constructed using **Nice** components.



- A** Gearmotor
- B** Photocells
- C** Posts for photocells
- D** Key selector
- E** Warning light with aerial
- F** Rack

The above-mentioned components are positioned according to a typical standard layout. Using the layout shown in **“Figure 4”** for reference, define the approximate position in which each component of the system will be installed.

**Table 4**

TECHNICAL SPECIFICATIONS OF ELECTRICAL CABLES	
Identification no.	Cable characteristics
1	GEARMOTOR POWER SUPPLY cable 1 cable 3 x 1.5 mm <sup>2</sup> Maximum length 30 m [note 1]
2	Cable for WARNING LIGHT WITH AERIAL 1 cable 2 x 0.5 mm <sup>2</sup> Maximum length 20 m 1 x RG58-type shielded cable Maximum length 10 m; recommended < 5 m
3	PHOTOCELL cable 2x0.5mm <sup>2</sup> Maximum length 30 m [note 2]
4	KEY SELECTOR cable 2 cables 2 x 0.5 mm <sup>2</sup> [note 3] Maximum length 50 m
5	FIXED EDGES cable 1 cable 2 x 0.5 mm <sup>2</sup> [note 4] Maximum length 30 m
6	MOVABLE EDGES cable 1 cable 2 x 0.5 mm <sup>2</sup> [note 4] Maximum length 50 m [note 5]

**Note 1** If the power supply cable is longer than 30 m, a cable with larger cross-sectional area (3 x 2.5 mm<sup>2</sup>) must be used and a safety earthing system must be installed near the automation.

**Note 2** If the “BlueBus” cable is longer than 30 m, up to maximum 50 m, a 2 x 1 mm<sup>2</sup> cable is required.

**Note 3** These two cables can be replaced by a single 4 x 0.5 mm<sup>2</sup> cable.

**Note 4** If more than one edge is present, refer to the paragraph **“Adding or removing devices”** (page 45) “STOP input” for the type of connection recommended.

**Note 5** Movable edges must be connected to sliding leaves using special devices, which enable the connection even when the leaf is moving.



**Before proceeding with the installation, prepare the required electrical cables by referring to “Figure 4” and to that stated in the “TECHNICAL SPECIFICATIONS” chapter (page 54).**



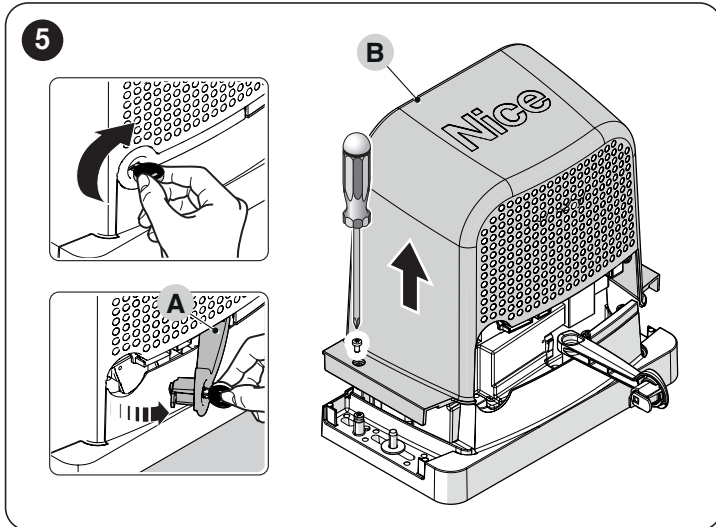
**The cables used must be suited to the type of environment of the installation site.**



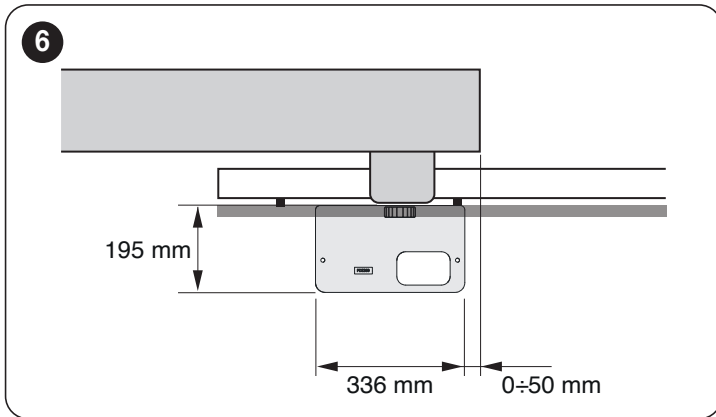
**When laying the pipes for routing the electrical cables, take into account that any water deposits in the junction boxes may cause the connection pipes to form condensate inside the control unit, thus damaging the electronic circuits.**



Before proceeding with the installation, open the stop hook (A) and remove the cover (B) by loosening the fixing screws after manually unlocking the motor using the spanner provided.



Before proceeding with the installation, verify the overall dimensions of the gearmotor by referring to "Figure 2" and the installation measurements in "Figure 6".



### 3.6 INSTALLING THE GEARMOTOR

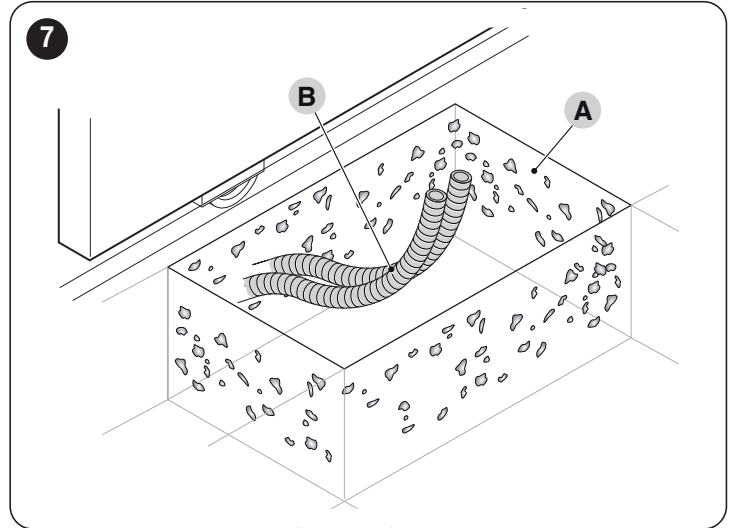


Incorrect installation may cause serious physical injury to the person working on the system or to its future users.

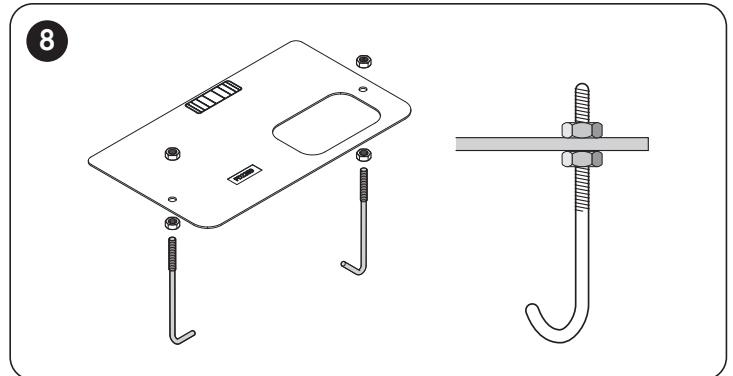
Before starting to assemble the automation, complete the preliminary checks described in the "Pre-installation checks" paragraph (page 6) and the "Product usage limits" paragraph (page 6).

To install **ROBUS**:

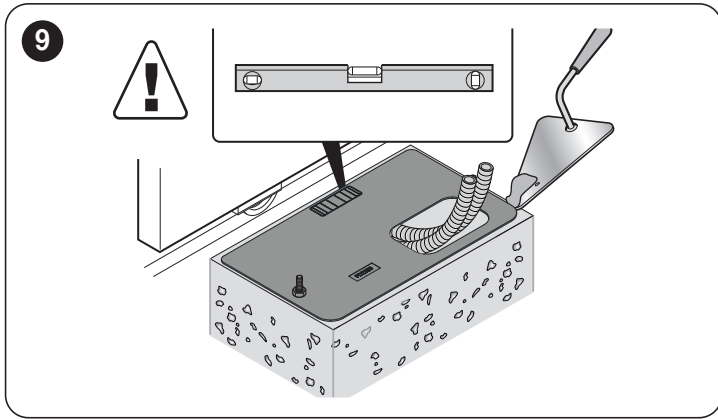
1. dig the foundations (A) and arrange the pipes (B) for the wiring ("Figure 7")



2. Secure the two anchor bolts to the foundation plate with one nut above and one below the latter ("Figure 8")

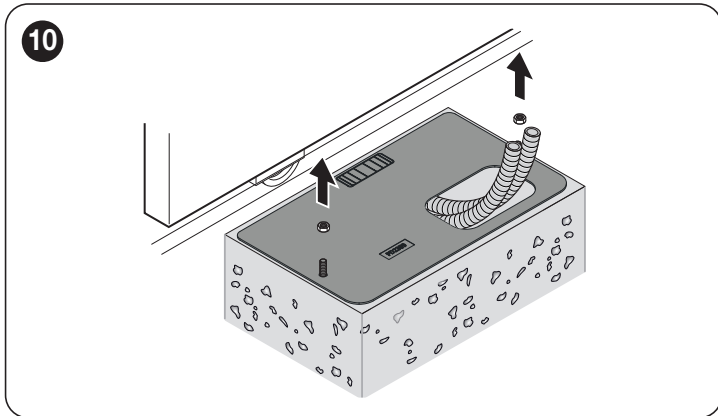


3. cast the concrete to secure the foundation plate ("Figure 9")

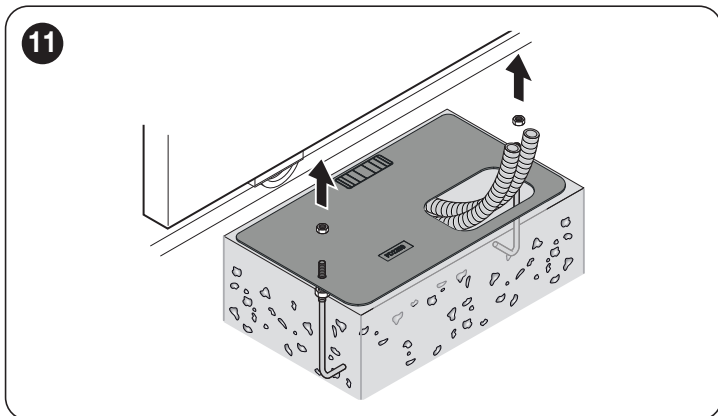


**!** Before the concrete hardens, make sure the foundation plate is perfectly level and parallel to the gate leaf.

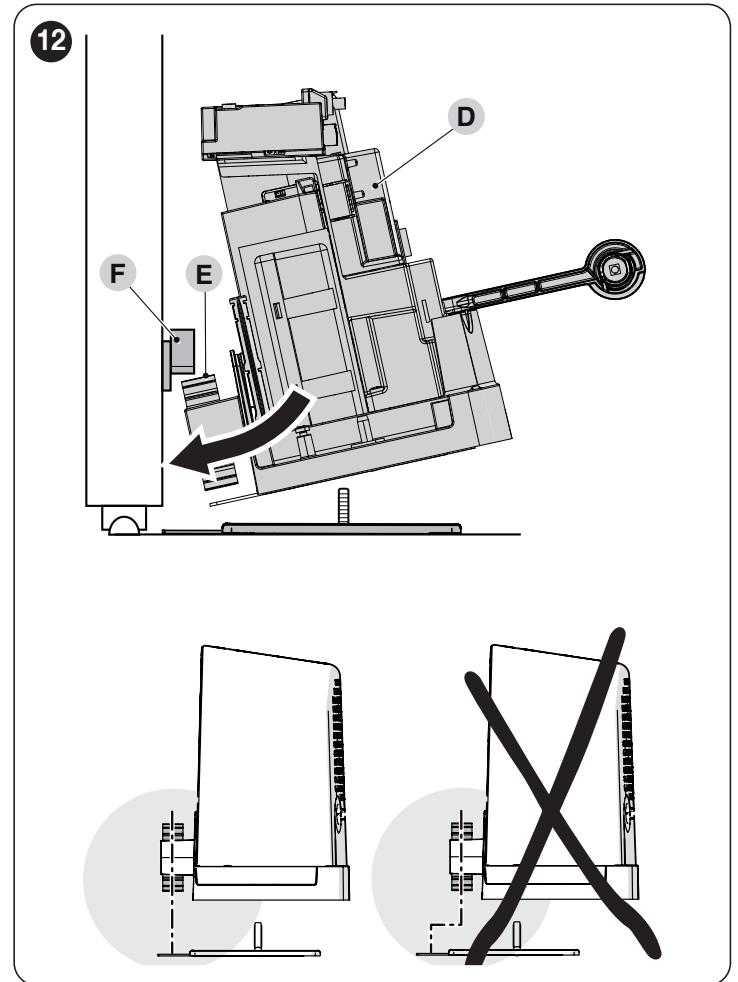
4. wait for the concrete to harden and then remove the nuts ("Figure 10")



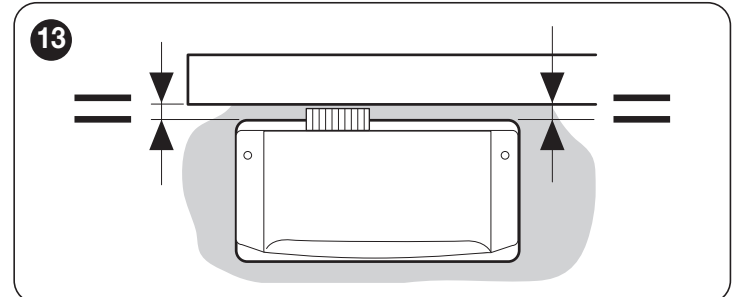
**📖** It is possible to use the foundation plate already present and compatible supplied with anchor bolts. ("Figure 11")



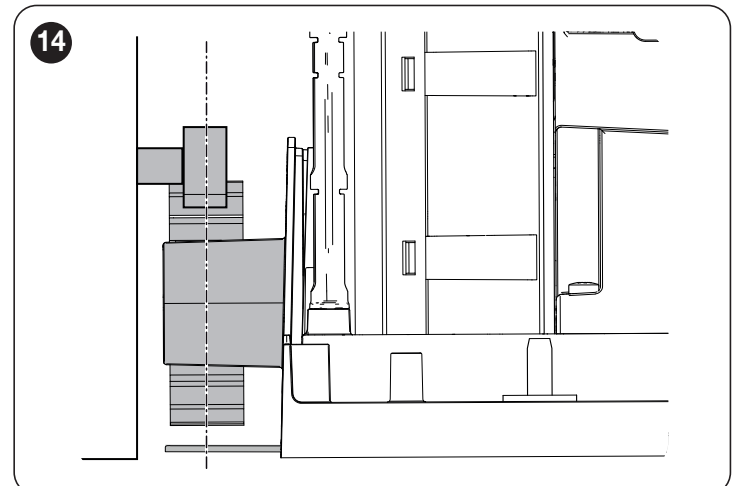
5. position the gearmotor (D) while taking care to insert the pinion (E) beneath the rack (F) ("Figure 12")



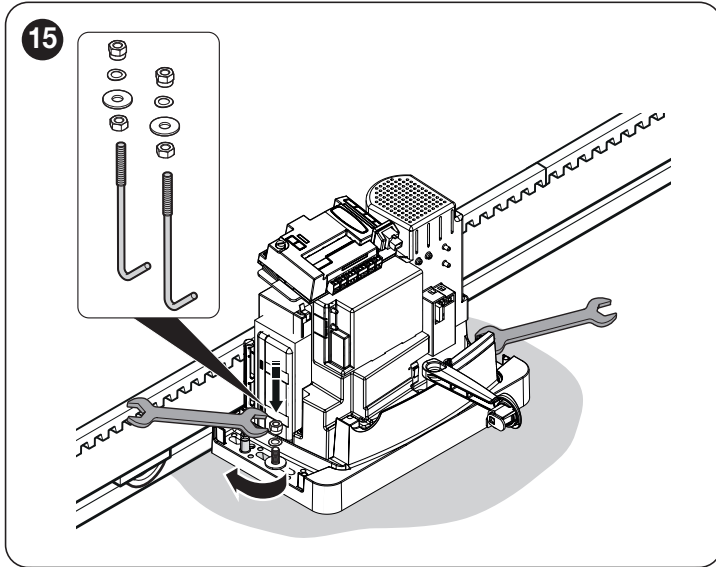
6. verify that the gearmotor lies parallel to the gate leaf ("Figure 13")



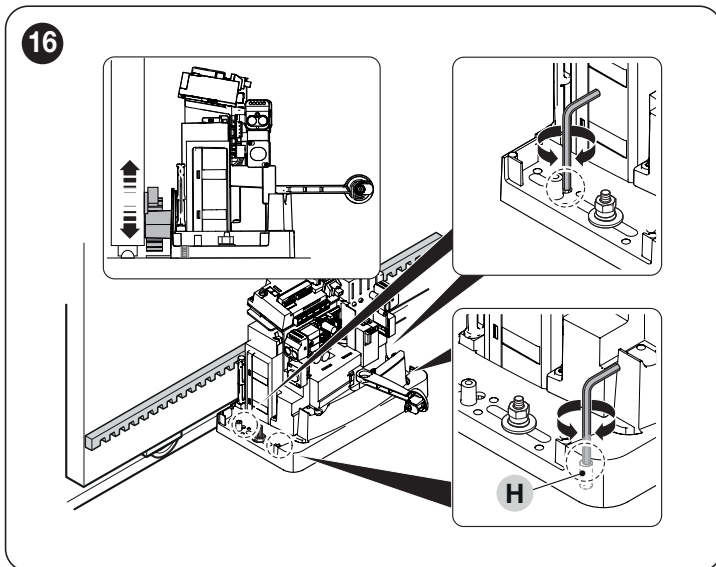
7. check that the pinion is aligned with the rack ("Figure 14")



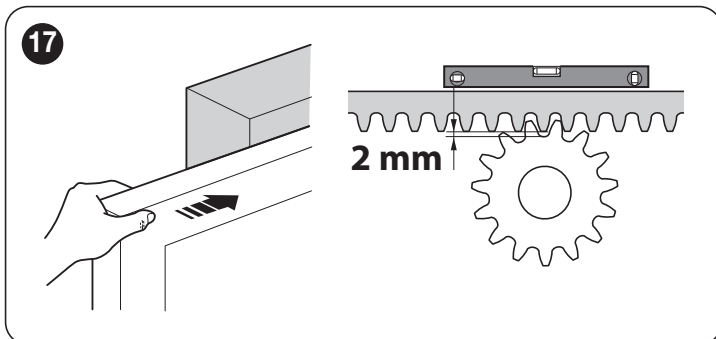
8. insert the washers and nuts provided and tighten them slightly ("Figure 15")



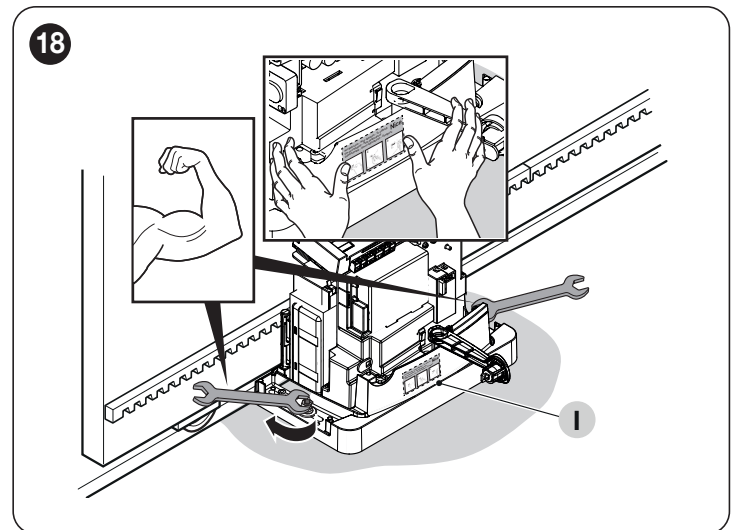
9. adjust the gearmotor's height using the adjuster grub screws (H) and move the pinion to roughly 1 or 2 mm from the rack, so as to prevent the leaf's weight from bearing on the gearmotor ("Figure 16")



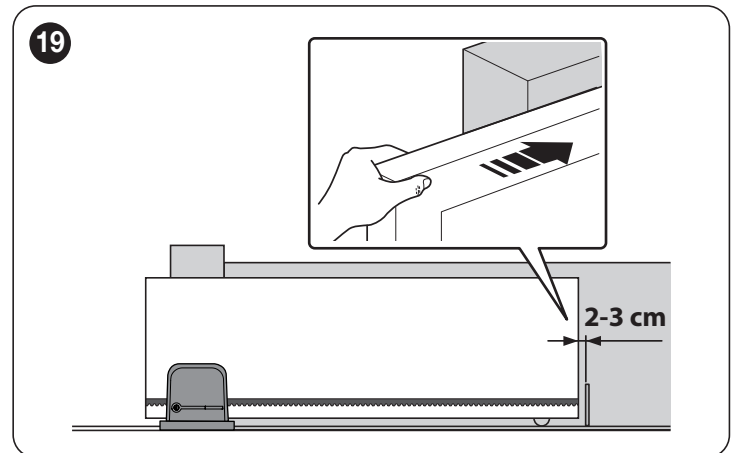
10. manually open and close the gate leaf and check that it slides smoothly. Moreover, check that the rack is always aligned with respect to the pinion ("Figure 17")



11. vigorously tighten the nuts to secure the gearmotor to the foundation plate and apply the sticker (I) relative to the unlocking instructions ("Figure 18")

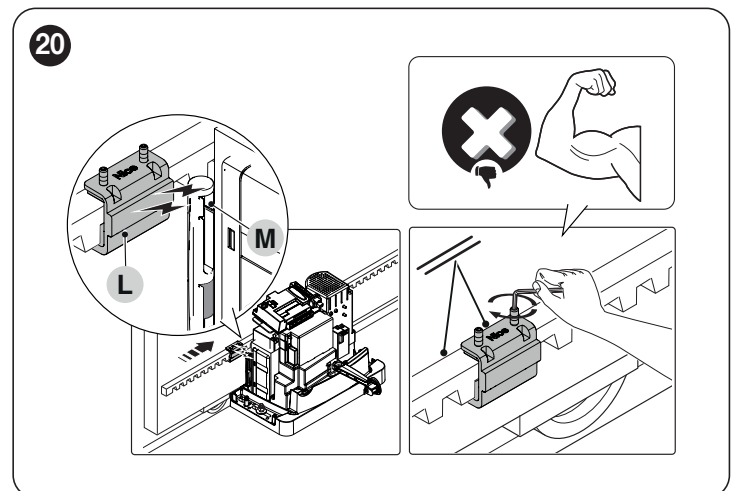


12. slide the gate leaf open by hand, stopping it 2/3 before the mechanical stop ("Figure 19")



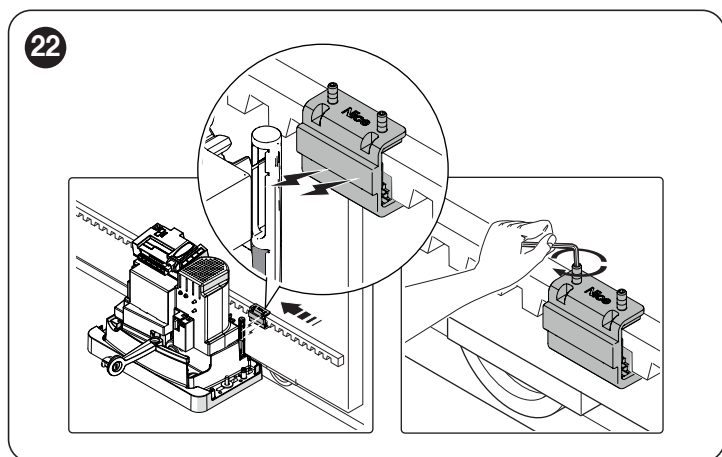
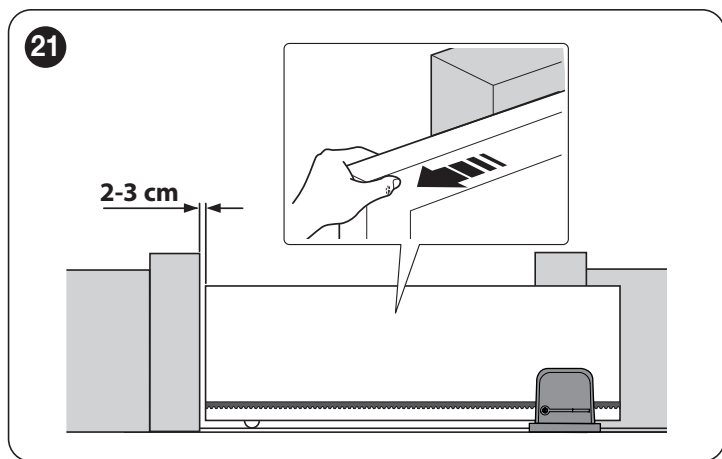
13. apply the limit switch bracket (L) to the rack as close as possible to the sensor (M) and fasten it with the appropriate grub screws ("Figure 20")

**!** Do not apply excessive pressure while fastening the limit switch bracket.

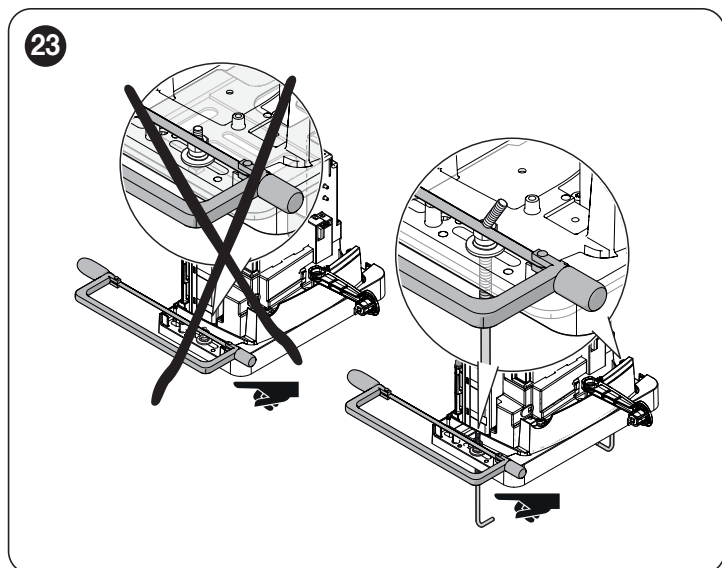


**!** The limit switch bracket with its magnet must not be aligned with the sensor. In this case, its load capacity is poor and the gate risks not stopping correctly.

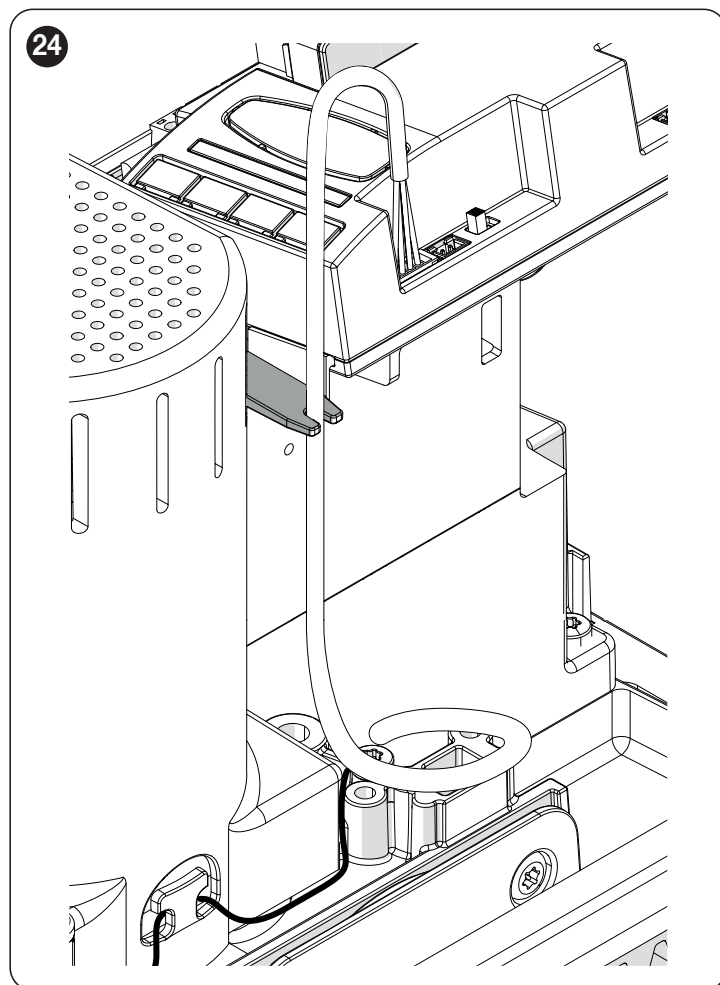
14. manually close the gate leaf leaving it 2/3 cm from the mechanical stop and repeat the operations described above to fasten the limit switch bracket ("Figure 21")



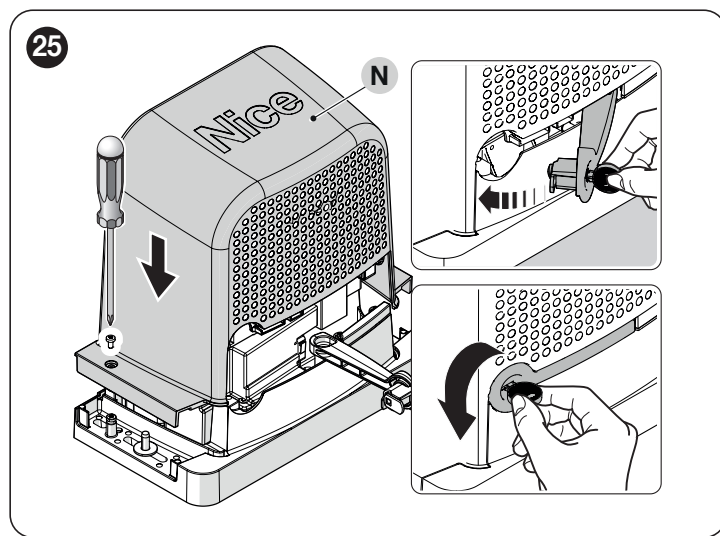
15. if the anchor bolts were also used for fastening, cut away the excess part ("Figure 23")



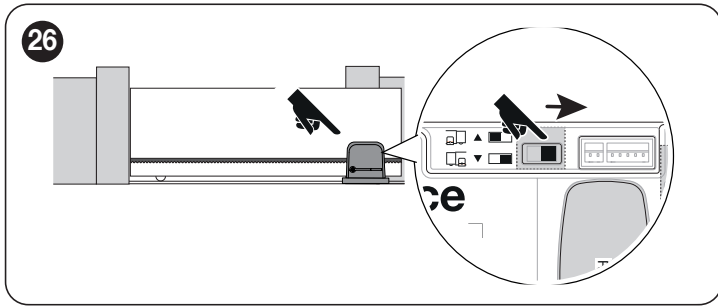
16. secure the cable in the relevant cable clamp to avoid damaging it during the successive phases ("Figure 24")



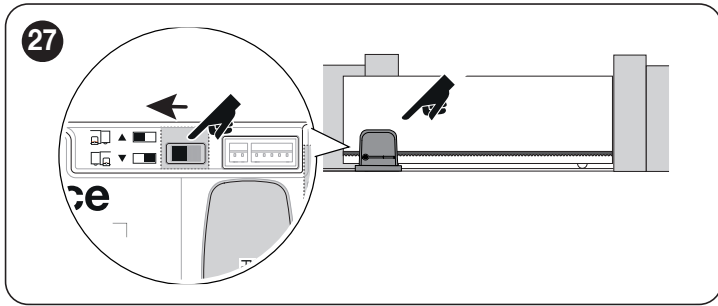
17. position the cover (N), fasten it with the screws provided, lock it manually and remove the key supplied. ("Figure 25")



**!** **IMPORTANT.** The gearmotor is factory-configured for being installed on the right-and side. ("Figure 26")



**!** It can be installed on the left by shifting the selector as indicated ("Figure 27")



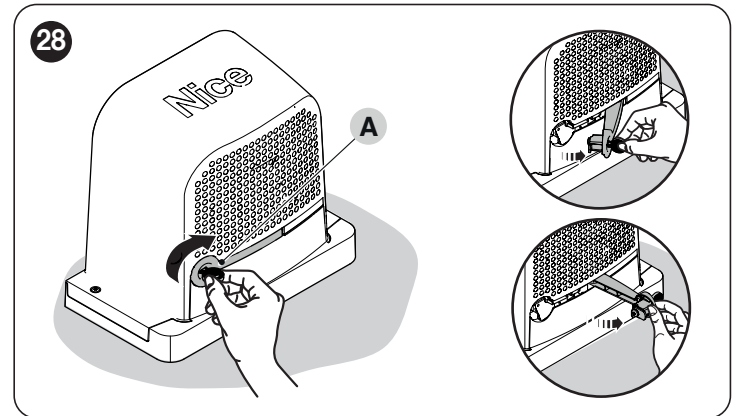
### 3.7 MANUALLY UNLOCKING AND LOCKING THE GEARMOTOR

The gearmotor is equipped with a mechanical unlocking system that allows for opening and closing the gate manually.

These manual operations should only be performed in case of a power outage, malfunctions or during the installation phases.

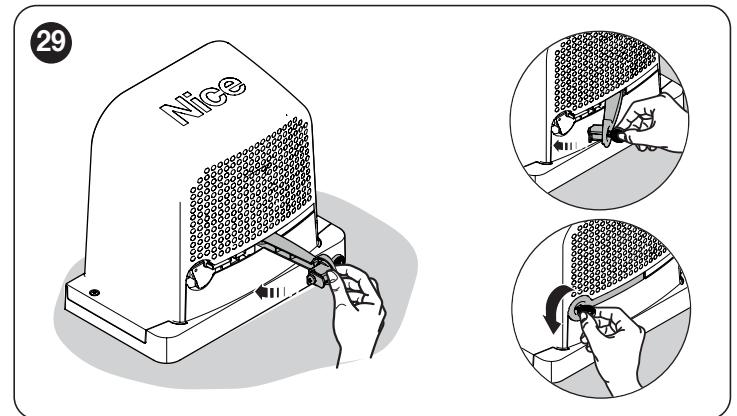
To unlock the device:

1. Open the locking hook (A) using the key provided ("Figure 28")




2. At this point, the automation can be moved manually to the desired position.

To lock the gate, close the locking hook, turn the key anti-clockwise and remove it.



## 4 ELECTRICAL CONNECTIONS

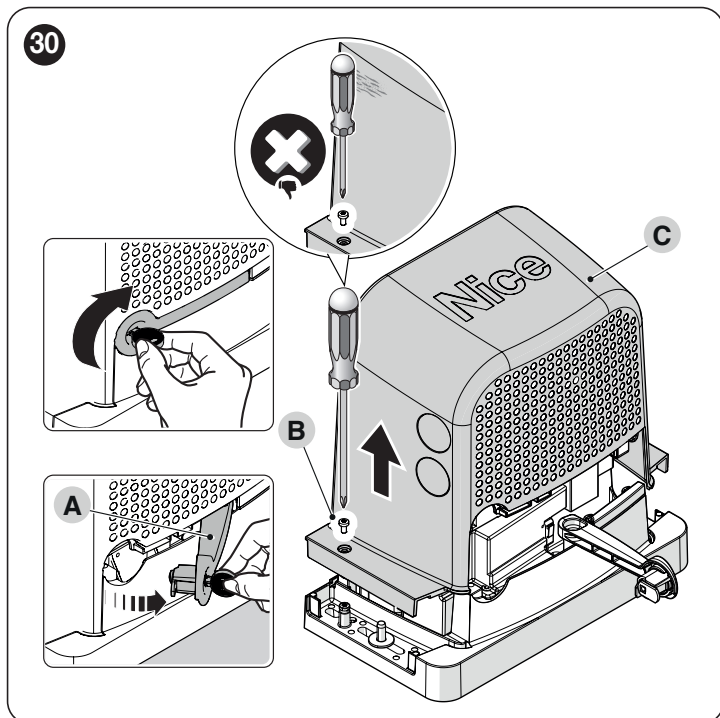
### 4.1 PRELIMINARY CHECKS

 All electrical connections must be made with the system disconnected from the mains electricity and with the emergency power supply (if present in the automation) disconnected.

 The connection operations must only be carried out by qualified personnel.

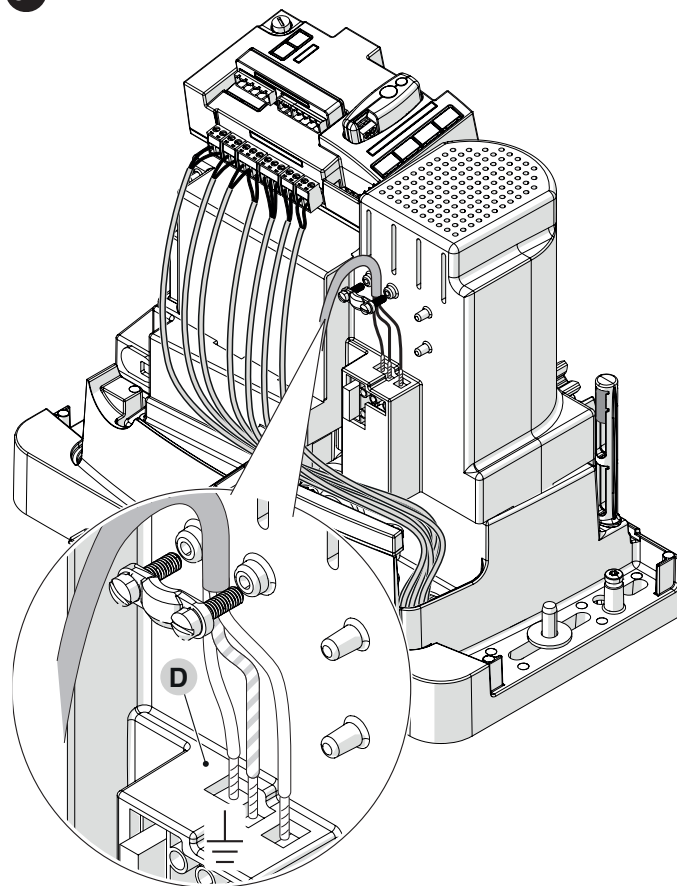
To make the electrical connections:

1. Open the locking hook (A) using the key provided
2. Remove the screws (B)
3. Remove the cover (C) ("Figure 30")



4. Feed the power cable through the relevant hole (leave 20/30 cm of free cable) and connect it to the relevant terminal clamp (D)
5. Lock the cable around the sheath using the cable clamp provided
6. Insert all the connecting cables into the various devices, leaving them 20–30 cm longer than necessary. Refer to "Table 4" for the type of cables and to "Figure 33" for the connections
7. Use a cable tie to group all the cables entering the gearmotor ("Figure 31")

31

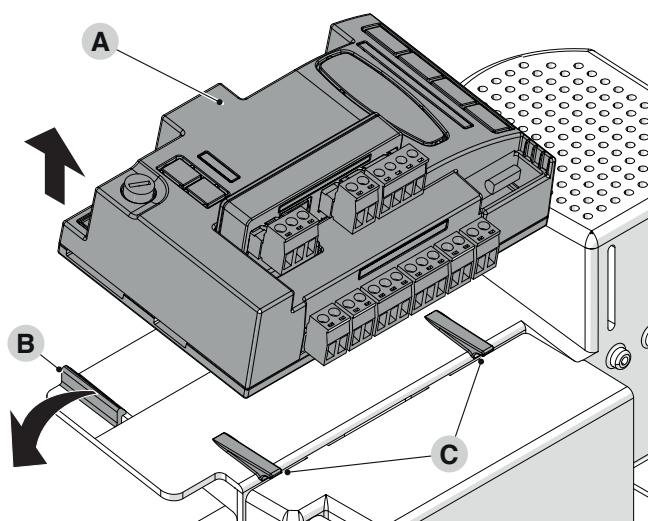


### 4.2 REMOVING THE CONTROL UNIT

The control unit can be removed whenever there is difficulty in making the electrical connections.

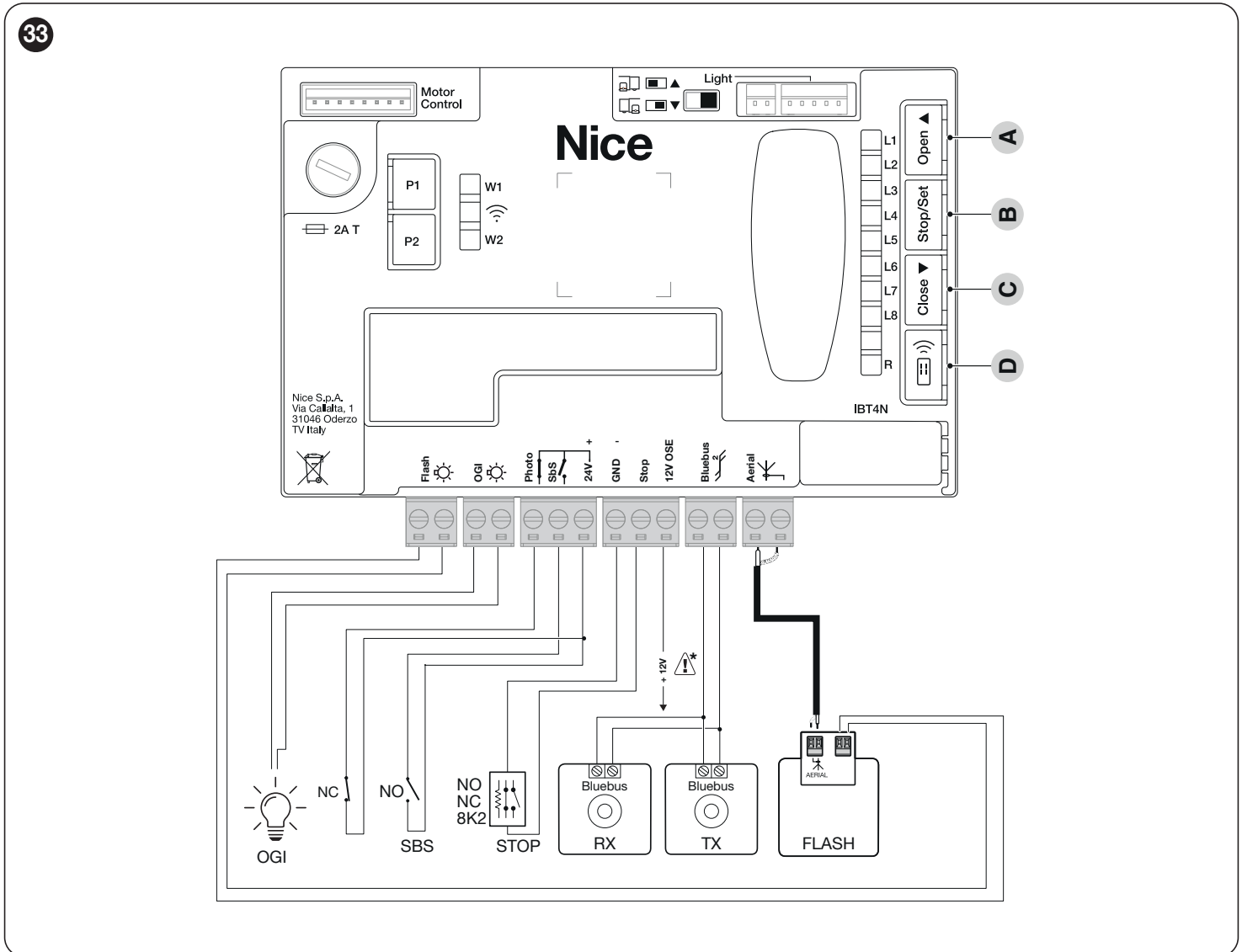
1. Hold the control unit (A) tightly with one hand
2. Remove any cables or terminals
3. Carefully press the plastic support (B) downwards and remove the control unit
4. The control unit is bound to the two supports (C) ("Figure 32")

32



## 4.3 WIRING DIAGRAM AND DESCRIPTION OF CONNECTIONS

### 4.3.1 WIRING DIAGRAM



### 4.3.2 DESCRIPTION OF CONNECTIONS

Table 5

ELECTRICAL CONNECTIONS	
Terminals	Description
<b>FLASH</b> (output limited to 10 W – 24 V)	This output is programmed by default to command a <b>Warning light</b> . The output can be programmed through all compatible interfaces (refer to the “ <b>PROGRAMMING THE CONTROL UNIT</b> ” chapter). The output configuration modes are listed in “ <b>Table 42</b> ”.
<b>OGI</b> (output limited to 10 W – 24 V)	This output is programmed by default to command the <b>Open Gate Indicator</b> . The output can be also programmed using the control unit keys (refer to the “ <b>PROGRAMMING THE CONTROL UNIT</b> ” chapter). The output configuration modes are listed in “ <b>Table 43</b> ”.
<b>BLUEBUS</b>	This terminal can be used to connect compatible devices, which are all connected in parallel with only two wires carrying both the electric power and communication signals. For further information on the BlueBUS, refer to the “ <b>Addressing of devices connected with the BlueBUS system</b> ” paragraph.
<b>STOP</b>	Input for devices that block or, if necessary, stop the manoeuvre under way. With suitable arrangements, “Normally Closed” or “Normally Open” contacts, or fixed resistor or optical devices must be connected to the input (refer to the “ <b>STOP input</b> ” paragraph).
<b>Sbs</b>	Input for devices that control the movement in Step-by-Step mode; it is necessary to connect “Normally Open” contacts.
<b>PHOTO</b>	Input for safety devices: it is possible to connect “Normally Closed” contacts to this input.
<b>ANTENNA</b>	Antenna connection input for radio receiver; the antenna is incorporated in the warning light; alternatively, an external antenna can be used.

 **Warning: 12 V only to connect opto electronic safety-edge (OSE) (max 15 mA)**



### 4.3.3 USING THE CONTROL UNIT BUTTONS

The control unit has 4 buttons, which behave differently in relation to the current status of the control unit.

#### OPERATION DURING PROGRAMMING

##### A [Open ▲]

- scrolls the programming menu forward
- increases by one point the value of the parameter being modified

##### B [Stop/Set]

- accesses the configuration of the selected parameter
- confirms the selected value of the chosen parameter

##### C [Close ▼]

- scrolls the programming menu backwards
- decreases by one point the value of the parameter being modified

##### D [Radio ☺]]]

- not enabled

#### NORMAL OPERATION

##### A [Open ▲]

- performs an opening manoeuvre

##### B [Stop/Set]

- stops the current manoeuvre
- with the motor stationary, it switches the courtesy light off
- if pressed for 3 seconds, the programming menu appears

##### C [Close ▼]

- performs a closing manoeuvre

##### D [Radio ☺]]]

- allows for memorising or deleting radio remote controls

### 4.4 ADDRESSING OF DEVICES CONNECTED WITH THE BLUEBUS SYSTEM

By means of addressing using special jumpers, the "BlueBUS" system enables the user to make the control unit recognise the photocells and assign the correct detection function.

The addressing operation must be done on both the TX and RX photocells (setting the jumpers in the same way), while making sure there are no other pairs of photocells with the same address.

In an automation for automated sliding gates, the photocells can be installed as shown in the figure below.



**At the end of the installation procedure, or after photocells or other devices have been removed, it is necessary to complete the learning procedure (see the "Device learning" paragraph).**

34

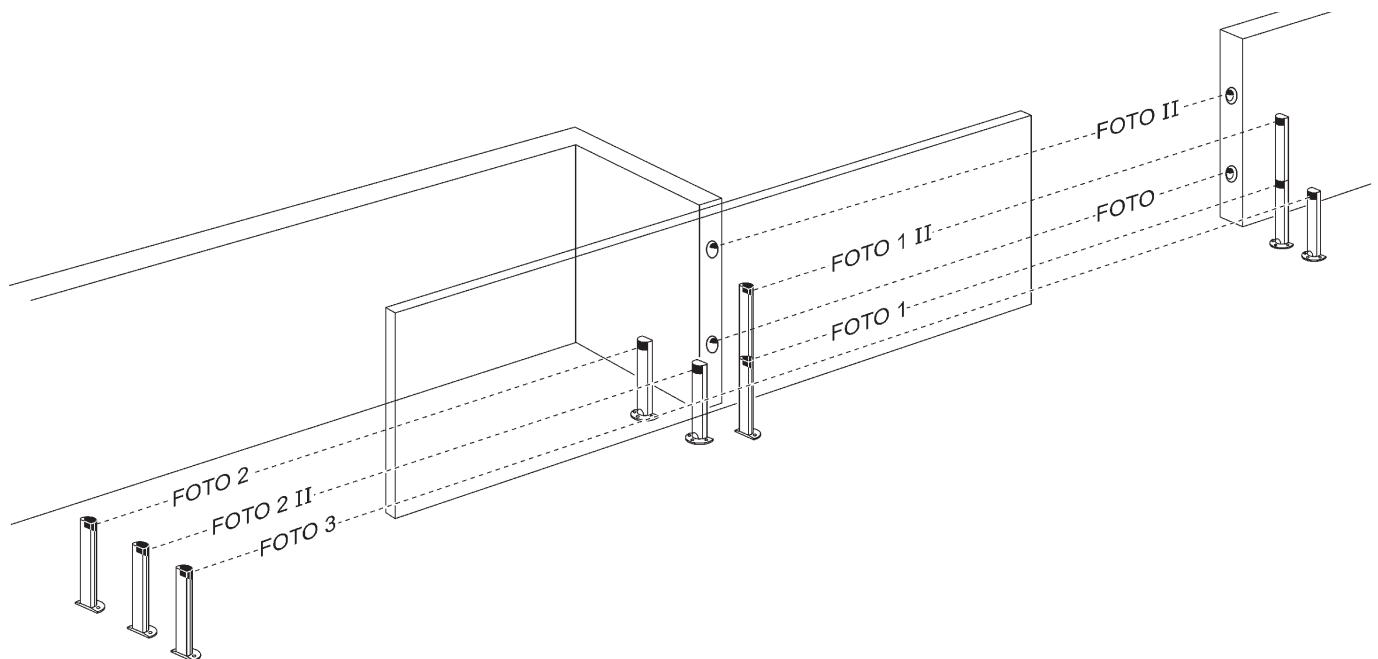
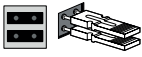

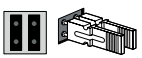
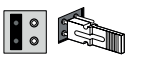
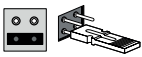
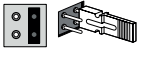



Table 6

PHOTOCELL ADDRESSES	
Photocell	Position of the jumpers
<b>FOTO (PHOTO)</b> External photocell h = 50 cm activated when the gate closes	
<b>FOTO II (PHOTO II)</b> External photocell h = 100 cm activated when the gate closes	
<b>FOTO 1 (PHOTO 1)</b> Internal photocell h = 50 cm activated during the closing phase (stops and reverses the gate's movement)	
<b>FOTO 1 II (PHOTO 1 II)</b> Internal photocell h = 100 cm activated during the closing phase (stops and reverses the gate's movement)	
<b>FOTO 2 (PHOTO 2)</b> External photocell activated during the opening phase	
<b>FOTO 2 II (PHOTO 2 II)</b> Internal photocell activated during the opening phase	
<b>FOTO 3 (PHOTO 3)</b> Single photocell covering the entire automation. Stops the movement and reopens the automation when released	



In order to jointly install PHOTO 3 and PHOTO II, the position of the elements making up the photocell (TX-RX) must comply with the warning indicated in the instruction manual of the photocells.

#### 4.4.1 FT210B PHOTOSENSOR

The FT210B photosensor combines in a single device a force limiting system (type C, in accordance with the EN12453 standard) and a presence sensor that detects obstacles on the line of sight between the TX transmitter and RX receiver (type D, in accordance with the EN12453 standard). In the FT210B photosensor, the signals regarding the status of the sensitive edge are sent through the photocell range, integrating the 2 systems in a single device. The transmitting element located on the moving leaf is battery-powered, which eliminates visually unpleasant connection systems; special circuits reduce battery consumption, ensuring up to 15 years' life (see estimation details in the product's instructions).

A single FT210B device combined with a sensitive edge (TCB65, for example) allows for attaining the level of safety of the "primary edge" required by the EN12453 standard for all "types of use" and "types of activation".

The FT210B photosensor combined with the "resistive" sensitive edges (8.2 kΩ) is safe against faults (category 3 pursuant to the EN 13849-1 standard). It is equipped with a special anti-collision circuit to prevent interference with other detectors, even not synchronised, and allows for adding other photocells; for example, in case of transit of heavy vehicles, where a second photocell is normally positioned 1 m above the ground.



**Consult the FT210B instruction manual for further information on the connection and addressing methods.**

## 4.5 "SLAVE" MODE

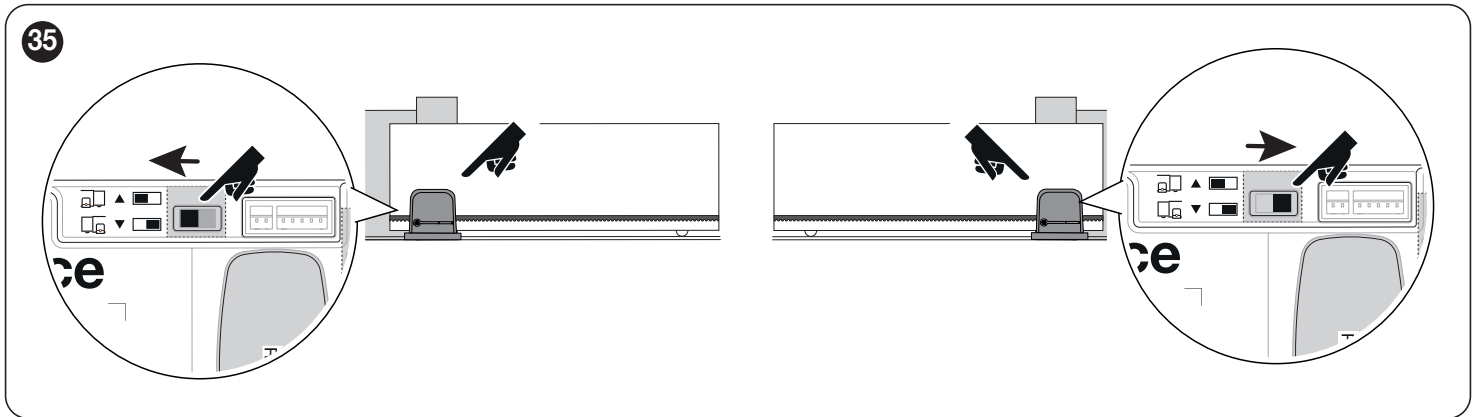
**⚠ Compatibility guaranteed with two products of the current generation or with one of the current generation and one of the previous generation (not prior to January 2019).**

When properly programmed and connected, **ROBUS** can function in "Slave" mode; this type of function is used when 2 opposing gate leaves must be automated with the synchronised movement of the two gate leaves. In this mode, one **ROBUS** functions as a Master and commands the manoeuvres, while the second **ROBUS** functions as a Slave, executing the commands transmitted by the Master (all **ROBUS** are Masters by default).

To configure **ROBUS** as a Slave, level one "Slave mode" must be activated (see "**Level 1 programming procedure**").

The connection between the Master **ROBUS** and the Slave **ROBUS** is made via BlueBus.

**⚠ In this case it is necessary to observe the polarities when connecting the two ROBUS as illustrated. ("Figure 36") (The other devices continue not to have polarity)**



Follow the operations below to install 2 **ROBUS** in Master and Slave mode:

– Mechanically install the 2 motors

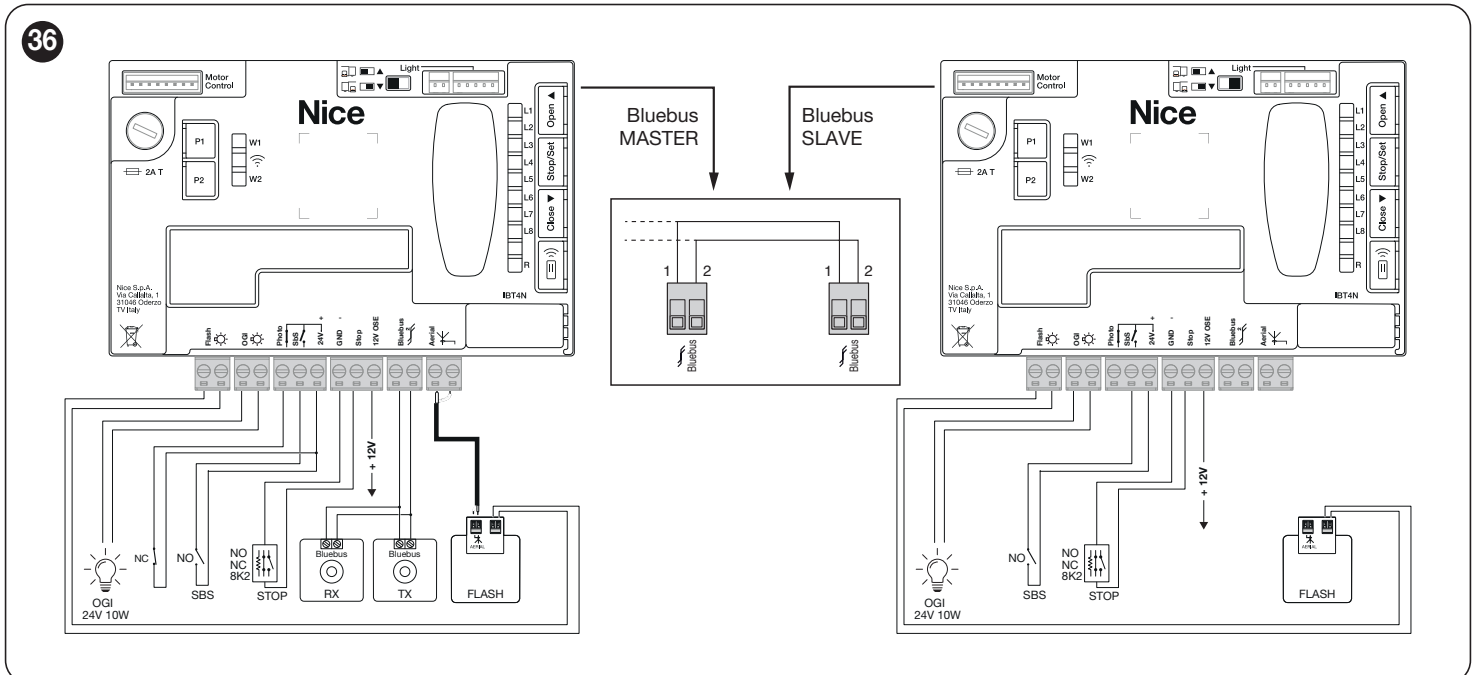
It is not important which motor must function as Slave or Master; the choice must take into account the convenience of the connections and the fact that the Step-by-Step command of the Slave only allows the Slave leaf to be opened fully

Preamble: Slave (S) and Master (M) full deletion.

1. (S) Select the direction of the opening manoeuvre (using the direction selector);
2. (S) On the Slave automation, run the device learning and the leaf length learning procedures (see paragraphs "**Device learning**" and "**Leaf length learning**".) If the direction is inverted, repeat point 1.
3. (S) On the Slave automation, programme the "Slave Mode" function (slave mode = on, see "**Level 1 programming procedure**".)
4. (S+M) Connect the two automations as shown in the diagram in "**Figure a28fe501-89c2-4bde-809e-6e9e652fb6a3**"
5. (M) Select the direction of the opening manoeuvre (using the direction selector);
6. (M) On the Master automation, run the device learning and the leaf length learning procedures (see paragraphs "**Device learning**" and "**Leaf length learning**".)

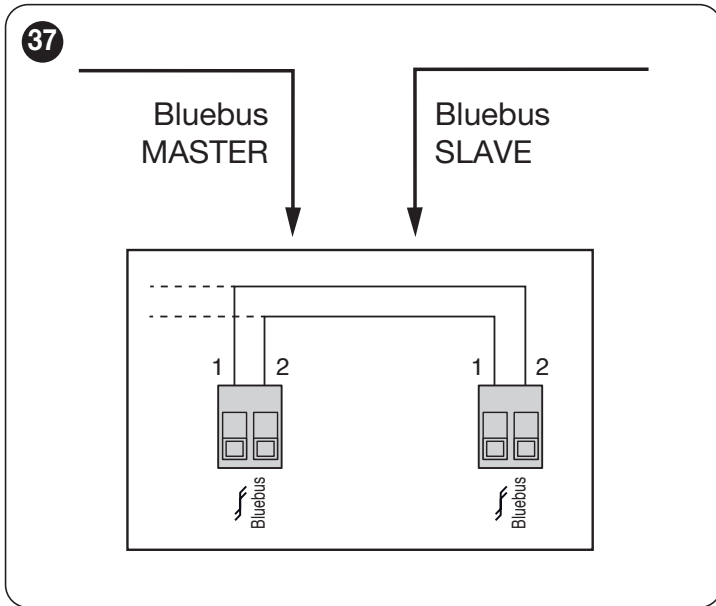
During the door leaf learning procedure, the Slave automation will also move.

If the direction is inverted, repeat point 5.





In Slave mode with products of the previous generation (RBA3), the Bluebus connecting cables between the two motors must be inverted.



When connecting 2 ROBUS in the Master-Slave mode, make sure that:

- All devices are connected to the Master **ROBUS**, including the radio receiver
- When using back-up batteries, each motor has its own battery
- All programming activities performed on the Slave **ROBUS** are ignored (those on Master **ROBUS** override the others) except for those mentioned in "Table 7".

Table 7

PROGRAMMING ACTIVITIES ON THE SLAVE ROBUS INDEPENDENT FROM THE MASTER ROBUS	
Level 1 functions (ON-OFF functions)	Level 2 functions (adjustable parameters)
Stand-by	Motor speed
Peak	OGI output
Slave mode	Motor force
	Error list
<b>On Slave it is possible to connect:</b>	
• a flashing light (Flash)	
• an own Open Gate Indicator (OGI)	
• a sensitive edge (Stop)	
• an own command device (SbS) that controls the opening of the Slave leaf only	
The Photo input is not used on the Slave. The automatic closing, close after photo, always close and pre-flashing parameters are deactivated. Moreover, the internal radio is inhibited.	

## 5

## FINAL CHECKS AND START-UP

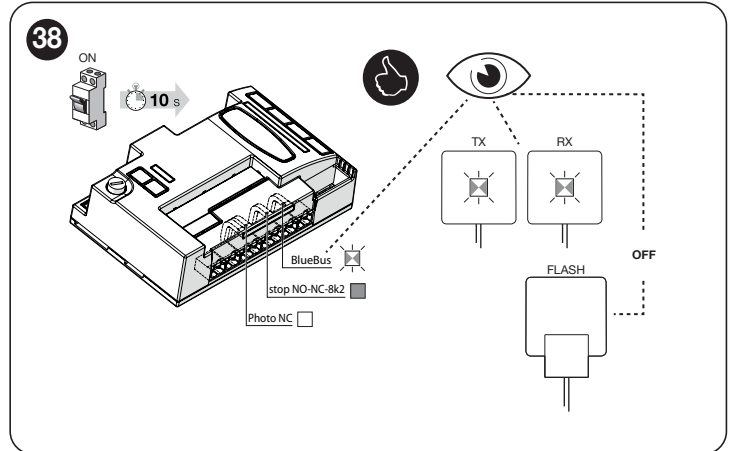
### 5.1 POWER SUPPLY CONNECTION



The power supply connections must only be made by qualified and experienced personnel possessing the necessary requirements and in full conformity to the laws, regulations and standards in force.

As soon as the product is powered, a few simple checks should be carried out:

1. check that the BlueBus LED flashes regularly with one flash per second.
2. make sure that the LEDs on the photocells (both the TX and RX) also flash; the type of flashing is irrelevant, since it depends on other factors.
3. check that the warning light and the status light connected to the FLASH output are off.
4. check that the NC Photo LED is lit.
5. check that the courtesy light is off. (Where available)



If the above conditions are not satisfied, immediately switch off the power supply to the control unit and carefully check the electrical connections. Further useful information on fault search and diagnosis is included in the "Troubleshooting" paragraph (page 38).

## 5.2 DEVICE LEARNING

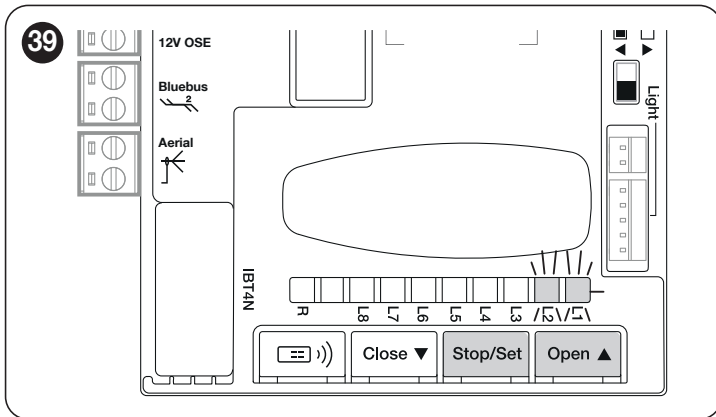
After connecting the power supply, the control unit must learn the devices connected to the "BlueBus" and "STOP" inputs, and also the **rotation direction of the motor** set on the selector. Moreover, this procedure recognises and memorises the input and output expansion board connected to the control unit. Before this phase, LEDs "L1" and "L2" will flash to indicate that recognition of the devices must be carried out.



**The learning phase must be carried out even if no device is connected to the control unit.**

To do this:

1. simultaneously press and hold the [Open ▲] and [Stop/Set] buttons
2. release the buttons when LEDs "L1" and "L2" start flashing quickly (after roughly 3 seconds)
3. wait a few seconds until the control unit has completed the device learning phase
4. once this phase terminates, the "Stop" LED must be lit and LEDs "L1" and "L2" must switch off. In case of initial installation, LEDs "L3" and "L4" will start flashing.



The self-learning phase of the connected devices can be repeated at any time also after the installation, for example whenever a device must be added or removed.



**If the motor's rotation direction must be reversed, the device learning procedure must be performed again.**

## 5.3 LEAF LENGTH LEARNING

### 5.3.1 PRELIMINARY CHECKS

Once the devices have been learned, LEDs "L3" and "L4"; will start flashing; this means that the control unit must recognise the length of the gate leaf (distance between the closing and opening limit switches); this measurement is necessary to calculate the slowdown points and the partial opening point.

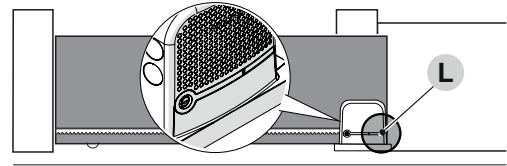
Before proceeding, make sure that the automation is unlocked. If not, unlock the motor and close the automation manually (see "**Manually unlocking and locking the gearmotor**" paragraph)

With the automation closed, three situations may occur:

- the status LED (L) is lit steady red (correct situation). The motor has correctly detected the closing limit switch
- the status LED (L) is lit steady green (position selector of the motor to be inverted). Verify the correct position ("**Figures 26 and 27**").
- the status LED (L) is off. Verify the correct position of the limit switch ("**Figures 19 and 20**").

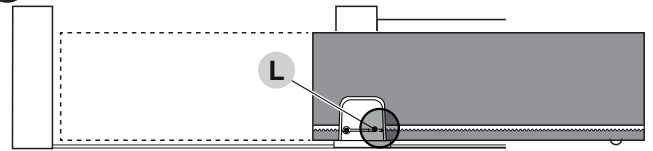
**The status LED (L) is lit steady red**

40



With the motor unlocked, position the gate in the opening position. In this case the status LED (L) must light up green. Close the gate and lock the motor again.

41



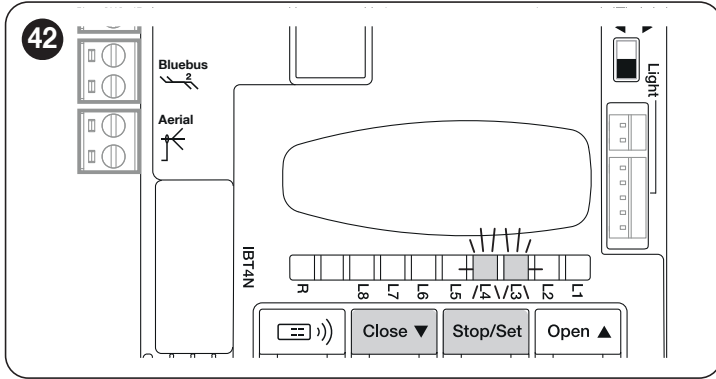
**The status LED (L) is lit steady green**

Verify the correct position of the motor position selector by observing that indicated in the paragraph **Installing the gearmotor** ("**Figures 26 and 27**").

### 5.3.2 LEAF LENGTH LEARNING OPERATIONS

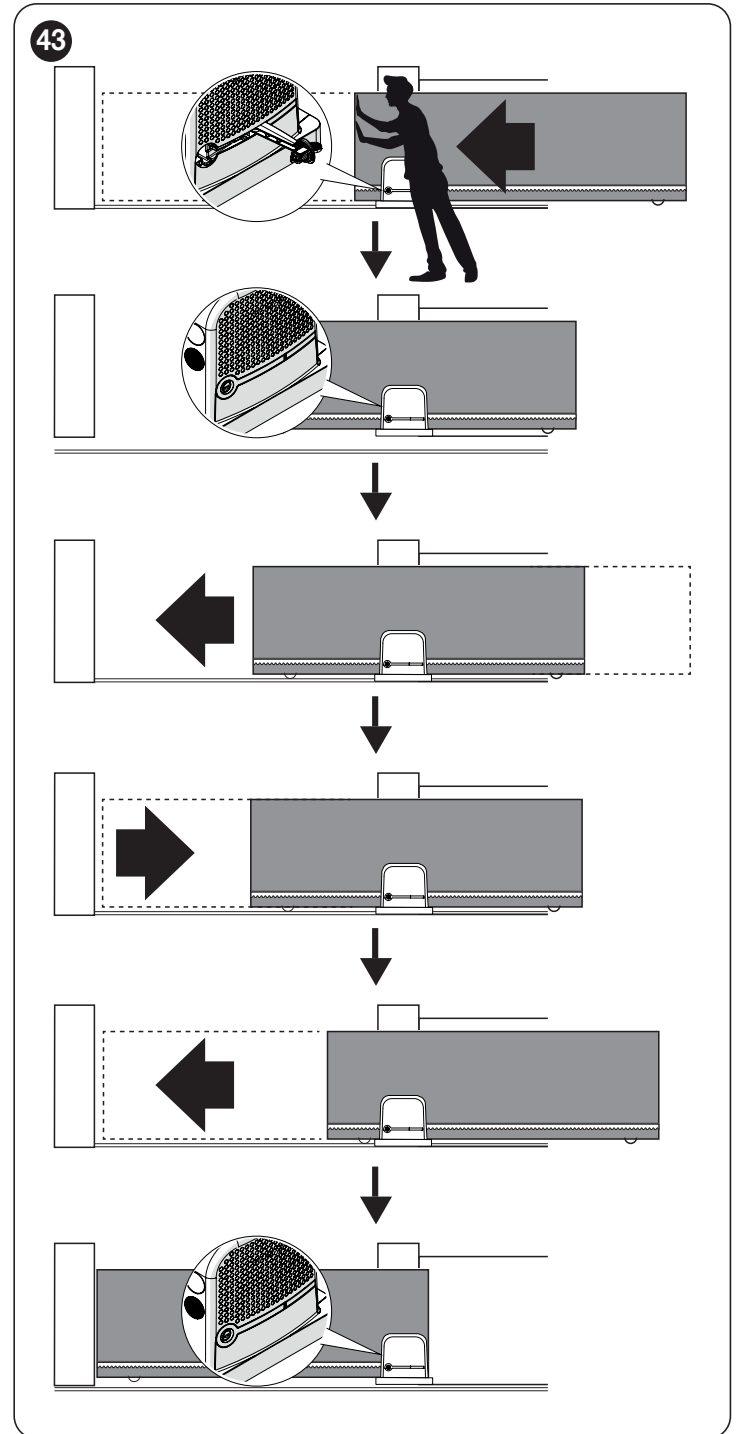
Before proceeding, make sure that the gate leaf is positioned midway along its path (not completely closed nor completely open). If it is not, unlock the motor, move the leaf then lock the motor again.

- Press and hold buttons **[Stop/Set]** and **[Close ▼]**
- Release the buttons when the manoeuvre starts (after approx. 3 seconds)
- Verify that the current manoeuvre is a closing movement, otherwise press the **[Stop/Set]** button and check the procedures described in "Figures 19, 20, 21, 22, 26 and 27" with greater care
- Wait for the control unit to fully complete the gate closing manoeuvre up to the closing limit switch; the opening manoeuvre will start immediately afterwards once the opening limit switch is reached
- Wait for the control unit to complete the opening manoeuvre
- Wait for the control unit to complete the final closing manoeuvre.



This procedure ensures rapid programming of the opening and closing positions, leaving the control unit to automatically calculate the intermediate positions which can be modified later on through the "myNice Pro" app and the compatible interfaces.

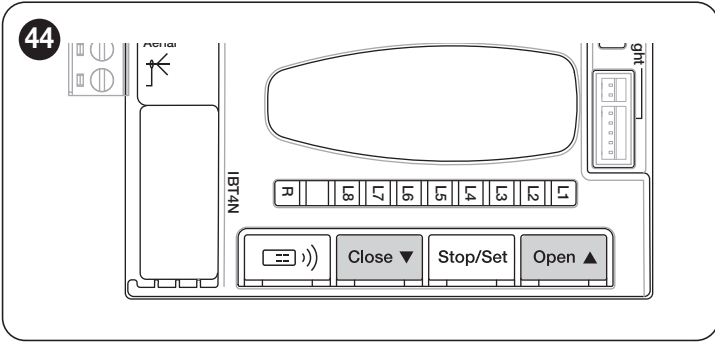
If the procedure was successful, LEDs "L3" and "L4" will switch off.



**Warning!** The position programming procedure (made through the control unit buttons) is automatic. If the procedure is interrupted, it must be resumed from the beginning.

## 5.4 CHECKING THE AUTOMATION'S MOVEMENT

Once the leaf length has been learned, it is advisable to carry out a few manoeuvres in order to verify that the automation moves properly

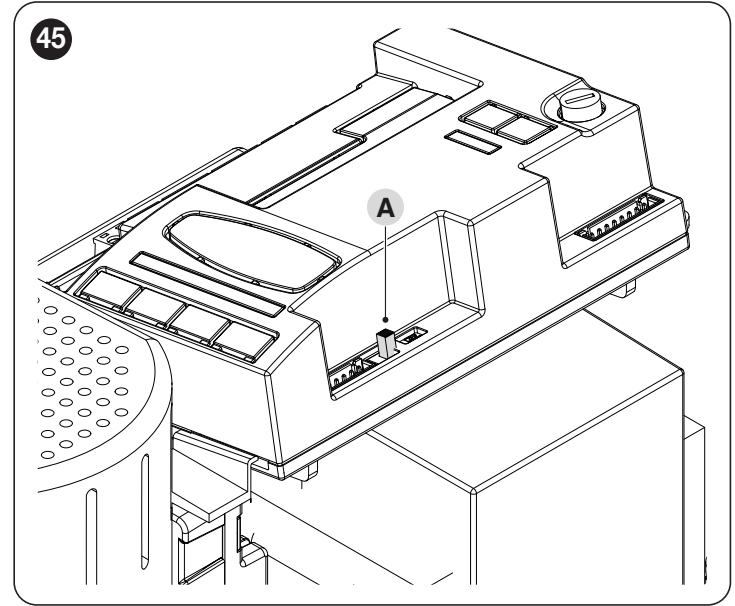


- Press the [Open ▲] button to command an “Open” manoeuvre; check that the automation opens regularly without any variations in speed; the leaf must only slow down when it is between 70 cm and 50 cm from the opening limit switch and then stop at 2–3 cm from the opening mechanical stop when the limit switch triggers
- Press the [Close ▼] button to command a “Close” manoeuvre; check that the automation closes regularly without any variations in speed; the leaf must only slow down when it is between 70 cm and 50 cm from the closing limit switch and then stop at 2–3 cm from the closing mechanical stop when the limit switch triggers
- During the manoeuvre, check that the warning light flashes at intervals of 0.5 seconds on and 0.5 seconds off. If present, also check the flashes of the light connected to the OGI terminal: slow flashing during opening, quick flashing during closing
- Open and close the gate several times to make sure that there are no points of excessive friction and that there are no defects in the assembly or adjustments
- Check that the ROBUS gearmotor, rack and limit switch brackets are stably and safely secured, and are suitably resistant also during sudden acceleration or slowdown movements of the automation

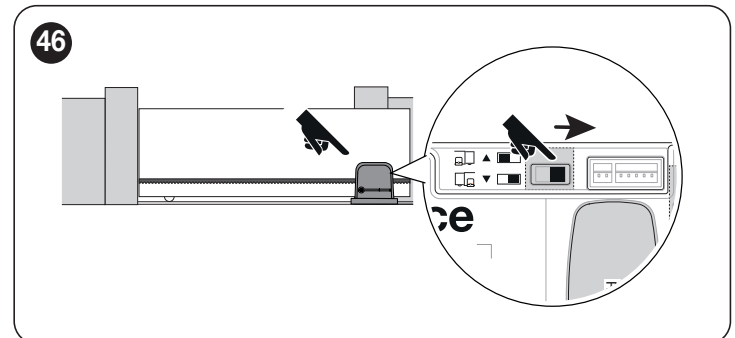
## 5.5 INVERTING THE DIRECTION OF MOTOR ROTATION

To modify the rotation direction, simply position selector (A) in the desired direction and start the BlueBus search procedure (refer to the “**Device learning**” chapter on page 21).

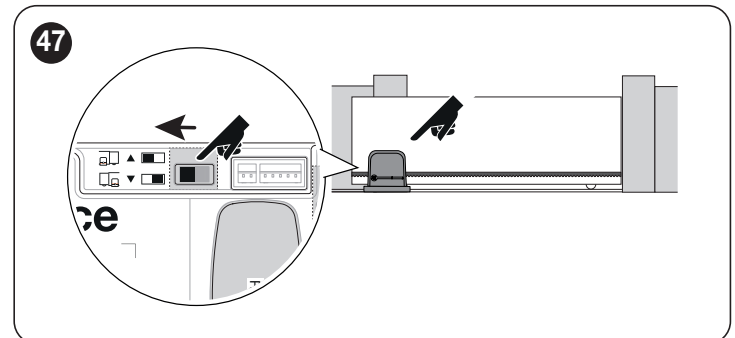
It is also necessary to repeat the position acquisition procedure (refer to the “**Leaf length learning**” chapter on page 21).



With the selector positioned as shown in **Figure 46 (default setting, typical installation)**, the automation is opened by moving it in the direction of the motor.



With the selector positioned as shown in **Figure 47**, the automation is opened by moving it in the direction opposite to that of the motor.



The change of direction will not be considered until the start of the device acquisition procedure (refer to the “**Device learning**” chapter on page 21 and the “**Leaf length learning**” chapter on page 21).

## 6 TESTING AND COMMISSIONING

These are the most important phases of the automation's construction, as they ensure maximum safety of the system. The test can also be used to periodically verify the devices making up the automation.



**Testing and commissioning of the automation must be performed by skilled and qualified personnel, who are responsible for the tests required to verify the solutions adopted according to the risks present, and for ensuring that all legal provisions, standards and regulations are met, in particular all the requirements of the EN 12453 standard, which defines the test methods for checking gate automations.**

The additional devices must undergo specific testing, both in terms of their functions and their proper interaction with the control unit. Refer to the instruction manuals of the individual devices.

### 6.1 TESTING

The testing procedure can also be performed as a periodic check of the automation devices. Each component of the system (sensitive edges, photocells, emergency stop, etc.) requires a specific testing phase; for these devices, observe the procedures given in the respective instruction manuals.

To run the test:

1. verify that all the instructions stated in the "**GENERAL SAFETY WARNINGS AND PRECAUTIONS**" chapter (page 3) have been strictly observed
2. unlock the gearmotor as explained in the paragraph "**Manually unlocking and locking the gearmotor**" (page 14) ("**Figures 85 and 86**")
3. verify whether it is possible to manually move the automation in both directions (open and close) with a force no greater than the value corresponding to the usage limits shown in "**Table 1**".
4. lock the gearmotor
5. using the control devices (selector, radio transmitter, etc.), test the gate opening, closing and stoppage phases, ensuring that the movement matches the specifications. Run several tests to check that the gate moves smoothly and check for any defects in the assembly or adjustment and any possible points of friction
6. To check the operation of the photocells and ensure that there is no interference with other devices, pass a cylinder (5 cm diameter, 30 cm length) on the optical axis, first near the "**TX**" photocell then near "**RX**" photocell and, lastly, at the mid-point between the two and verify that in all these cases the device is triggered, switching from the active to the alarm status and vice-versa; make sure that it triggers the intended action in the control unit; for example, that it triggers the reversal of movement during the closing manoeuvre.
7. verify the correct operation of all the safety devices present, one by one (photocells, sensitive edges, etc.). If a device intervenes, the "**BlueBus**" LED device on the control unit will emit two quick flashes to confirm the recognition
8. if potentially dangerous situations due to the movement of the leaves have been prevented by limiting the impact force, the latter must be measured according to the EN 12453 standard and, if the "motor force" control is used to aid the system in reducing the impact force, it is necessary to test various adjustments to find the one that gives the best results.

### 6.2 COMMISSIONING



**Commissioning can only be performed after all testing phases have been successfully completed.**



**Before commissioning the automation, ensure that the owner is properly informed of all residual risks and hazards.**



**The gate cannot be commissioned partially or under "temporary" conditions.**

To commission the automation:

1. compile the automation's technical file, which must include the following documents: overall drawing of the automation, wiring diagram, risk assessment and relative solutions adopted, the manufacturer's declaration of conformity for all devices used and the declaration of conformity compiled by the installer
2. affix a permanent label or sign near the gate specifying the operations for unlocking the gate and manoeuvring it manually
3. affix a data plate on the gate specifying at least the following data: type of automation, name and address of the manufacturer (responsible for commissioning), serial number, year of manufacture and CE mark
4. compile the declaration of conformity of the automation and hand it to the owner of the automation
5. compile the User Manual of the automation and hand it to the owner of the automation
6. compile and provide the owner with the automation's "Maintenance schedule", containing the maintenance instructions for all the automation's devices.



**For all the above-mentioned documentation, Nice – through its technical assistance service – provides the following: instruction manuals and guides.**



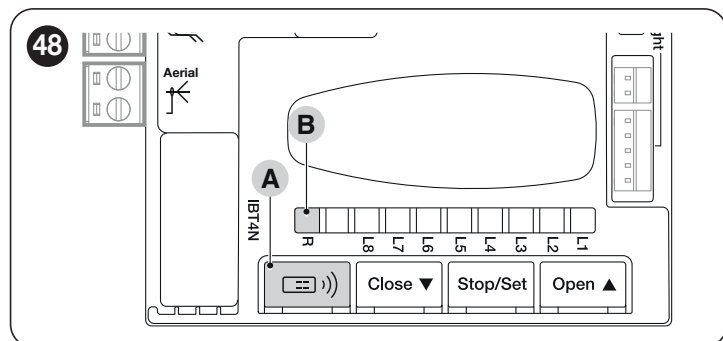
## 7 RADIO PROGRAMMING



The procedures have a limit time for being performed. Before starting, it is necessary to understand the entire process.

### 7.1 RADIO PROGRAMMING DESCRIPTION

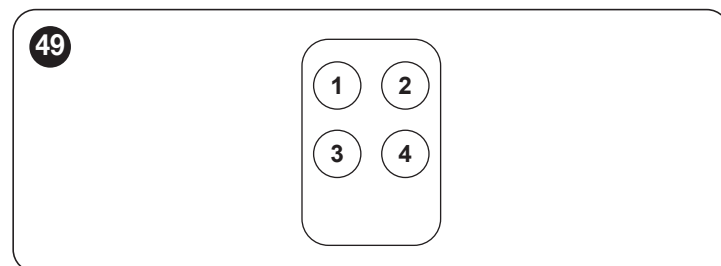
During the execution of the programming procedures, refer to “**Figure 48**” to identify the radio button **(A)** and LED **R (B)** on the control unit.



The symbols used in the various programming / deletion procedures with the internal radio module are listed in “**Table 10**”.

#### 7.1.1 PROCEDURE FOR MEMORISING TRANSMITTER BUTTONS

The radio remote controls can be memorised in 2 ways: in “standard” mode (or Mode 1) and in “custom” mode (or Mode 2).



##### 7.1.1.1 STANDARD memorisation (Mode 1: all buttons)

Procedures of this kind allow for simultaneously memorising, during their execution, **all the buttons** on the transmitter. The system automatically associates each button with a pre-defined command, according to the following scheme:

Table 8

TRANSMITTER FUNCTION PAIRINGS	
Command	Button
Step-by-Step	Will be paired with button 1
Partial Open	Will be paired with button 2
OPEN	Will be paired with button 3
CLOSE	Will be paired with button 4

##### 7.1.1.2 CUSTOM memorisation (Mode 2: one button only)

Procedures of this type allow for memorising – during their execution – **a single button** among those present on the transmitter. The installer decides which button to associate with the command on the basis of the automation’s needs. The commands available in this mode are those present in “**Table 9**”.

Table 9

OXI / OXIBD / OXIFM / OXIT / OXITFM EXTENDED MODE II		
No.	Command	Description
1	Step-by-Step	“SbS” (Step-by-Step) command
2	Partial opening 1	“Partial opening 1” command
3	Open	“Open” command
4	Close	“Close” command
5	Stop	Stops the manoeuvre
6	Condominium Step-by-Step	Command in condominium mode
7	High priority Step-by-Step	Commands also with the automation locked or the commands enabled
8	Partial open 2	Partial open (the gate opens up to the position set through Partial Open 2)
9	Partial open 3	Partial open (the gate opens up to the position set through Partial Open 3)
10	Opens and locks the automation	Triggers an opening manoeuvre and, once this terminates, locks the automation; the control unit will not accept any command other than “High-priority Step-by-Step”, “Unlock”, “Unlock and close” and “Unlock and open”
11	Closes and locks the automation	Triggers a closing manoeuvre and, once this terminates, locks the automation; the control unit will not accept any command other than “High-priority Step-by-Step”, “Unlock”, “Unlock and close” and “Unlock and open”
12	Lock automation	Triggers the stoppage of the manoeuvre and locks the automation; the control unit will not accept any command other than “High-priority Step-by-Step”, “Unlock”, “Unlock and close” and “Unlock and open”
13	Release automation	Triggers unlocking of the automation and restores normal operation
14	On Timer Courtesy light	The courtesy light output switches on with timer-based switching off
15	On-Off Courtesy light	The courtesy light output switches on and off in Step-by-step mode



**PLEASE NOTE =** For further details relative to the functions linked to the extractable radio receivers, consult the website [www.niceforyou.com](http://www.niceforyou.com).

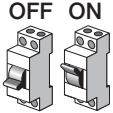
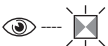
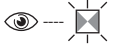

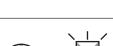
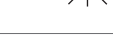
**Table 10**

<b>KEY TO THE SYMBOLS USED IN THE MANUAL</b>	
<b>Description</b>	<b>Symbol</b>
LED "R" steady lit	
LED "R" long flashing	
LED "R" fast flashing	
LED "R" off	
Disconnect power supply / Restore power supply (remove fuse F2 and the battery pack – if present)	OFF ON 
Wait ...	
Perform the operation within 5 seconds	>5 sec <
Press and hold the radio button on the control unit	
Press and release the radio button on the control unit	
Release the radio button on the control unit	
Press and release the desired transmitter button	
Hold down the desired transmitter button	
Release the desired transmitter button	
Observe when LED "R" emits signals	

## 7.2 VERIFYING TRANSMITTER ENCODING

To verify to which encoding system the transmitters already memorised in the receiver belong, proceed as explained in the table below:

Table 11

VERIFICATION OF THE TYPE OF ENCODING SYSTEM ADOPTED BY THE TRANSMITTERS ALREADY MEMORISED		
Description	Symbols used	
Disconnect the power supply to the control unit and then restore the power. Count the number of successive flashes:		
2 green flashes = transmitters memorised with O-Code encoding system		X 2
2 green flashes and 1 orange flash = transmitters memorised with O-Code + BD encoding system		X 2+1
5 green flashes = no transmitter memorised		X 5
5 green flashes and 1 orange flash = transmitters memorised with BD technology		X 5+1

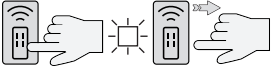


## 7.3 MEMORISATION OF A RADIO COMMAND

### 7.3.1 MEMORISATION IN “MODE 1”

While the procedure indicated in “Table 12” is being carried out, the receiver memorises all the buttons present on the transmitter, automatically assigning command 1 of the receiver to the 1st button, command 2 to the 2nd button, and so forth.

The memorisation will ultimately occupy a single memory location and the command associated with each button will depend on the “List of commands” present on the automation’s control unit.

Table 12

MEMORISATION IN MODE 1	
Description	Symbols used
Press and hold the “Radio” button on the control unit and wait for LED “R” to light up green. Release the “Radio” button	
On the transmitter being memorised	
If one-way, press and hold any button within 10 seconds and release it once LED “R” on the control unit emits the 1st of 3 green flashes (=memorisation completed correctly). (*1)	
If two-way, press and immediately release any button; LED “R” on the control unit will flash green 3 times (=memorisation completed correctly). (*1)	

(\*1) - If there are other transmitters to be memorised, repeat the sequence on the transmitter within the next 15 seconds after the first 10 seconds. The procedure will terminate automatically once this time elapses.



**To interrupt the procedure immediately (for example, to avoid memorising further radio remote controls), press the “Radio R” button once.**

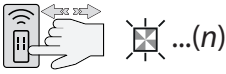

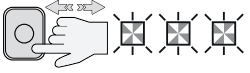
### 7.3.2 MEMORISATION IN “MODE 2”

During the execution of the procedure indicated in “Table 13”, the receiver memorises a single button among those present on the transmitter, assigning the function chosen by the installer.


To memorise further buttons, repeat the procedure from the beginning for each button to be memorised.

The memorisation will ultimately occupy a single memory location and the command associated with the memorised button will be that chosen by the installer from the “List of commands” of the automation’s control unit (see “Table 9”).

Table 13

MEMORISATION IN MODE 2 (AND EXTENDED MODE 2)	
Description	Symbols used
Choose the command to be memorised among those listed in “Table 9” and write down the identification number (n).	
Press and release the “Radio” button a number of times equal to the number (n) identifying the chosen command. LED “R” will flash the same number of times.	
On the transmitter being memorised	
If one-way, press and hold the button to be memorised within 10 seconds and release it only once LED “R” on the control unit emits the 1st of 3 green flashes (=memorisation completed correctly). (*2)	
If two-way, press and immediately release the button to be memorised within 10 seconds; LED “R” on the control unit will flash green 3 times (=memorisation completed correctly). (*2)	

(\*2) - If there are other transmitters for which the same command must be memorised, repeat the sequence on the button of any additional transmitter within the next 15 seconds after the first 10 seconds. The procedure will terminate automatically once this time elapses.

 **Warning! It is not possible to instantly interrupt the acquisition procedure. If necessary (for example to prevent involuntary pairings), disconnect power fuse F2, wait 30 seconds and then reinsert it.**

### 7.3.3 MEMORISING A NEW TRANSMITTER “NEAR THE RECEIVER”.



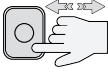
 **Warning! Only for one-way transmitters.**

During the execution of the procedure indicated in “Table 14”, a new transmitter receives the same radio settings of a transmitter already memorised on the control unit.

The procedure does not entail any direct action on the “Radio” button of the control unit, only the presence of the transmitter within the receiver’s reception range.

The memorisation “near the receiver” can be prevented by blocking the receiver’s functions as described in the “**Locking (or release) of memorisations carried out with the “near the control unit” procedure and/or through the “enabling code”**” paragraph.

Table 14

MEMORISING A NEW TRANSMITTER “NEAR THE RECEIVER”	
Description	Symbols used
On the new transmitter press and hold the button to be memorised. Wait 7 seconds and then release it.	
On the transmitter already memorised press slowly and release 3 times the memorised button to be copied.	
On the new transmitter press and release once the same button pressed at the start of the procedure.	

(\*2) - If there are other transmitters for which the same command must be memorised, repeat the sequence on the button of any additional transmitter within the next 15 seconds after the first 10 seconds. The procedure will terminate automatically once this time elapses.

### 7.3.4 MEMORISING A NEW TRANSMITTER USING THE “ENABLING CODE” OF AN OLD TRANSMITTER ALREADY MEMORISED IN THE RECEIVER

 **Warning! Only for transmitters with “O-Code” and “BD” encoding system**

The memory of transmitters with O-Code and BD encoding contains an “enabling code” (secret) which can be used to enable a new transmitter to be memorised in the receiver.

To perform this enabling procedure, read the transmitter’s instruction manual and get an old transmitter already memorised in the same receiver in which the new transmitter is to be memorised.

 **The enabling code can only be transferred between two identical transmitters that have the same radio coding.**

Subsequently, when the new enabled transmitter will be used, it will send to the receiver (in the first 20 transmissions) the command, its own identification code and the “enabling code” received. At this point, the receiver will recognise the enabling code of the old transmitter and automatically memorise the identification code of the new transmitter.

The undesired memorisation of transmitters through the “enabling code” can be prevented by blocking the receiver’s function (refer to the “**Locking (or release) of memorisations carried out with the “near the control unit” procedure and/or through the “enabling code”**” paragraph).

## 7.4 DELETING A RADIO COMMAND

### 7.4.1 DELETING A SINGLE COMMAND ASSOCIATED WITH A BUTTON FROM THE RECEIVER'S MEMORY

During the execution of the procedure indicated in "Table 15" it is possible to delete the memorisation of a command associated with a button



**Warning!** If the transmitter is memorised in "Mode 1" (refer to the "Memorisation in "Mode 1"" paragraph), during the procedure the entire transmitter is deleted, in other words, all buttons of the radio remote control.

Table 15

DELETING A SINGLE BUTTON FROM THE RECEIVER'S MEMORY	
Description	Symbols used
Press and hold the "Radio" button on the control unit and wait for LED "R" to light up green and switch off. Release the "Radio" button	
On the transmitter to be deleted	
If one-way, press and hold button (*4) to be deleted and release it only once LED "R" on the control unit has emitted the 1st of 5 fast green flashes (=memorisation completed correctly).	
If two-way, press and release the button to be deleted (*4); LED "R" on the control unit will emit 5 fast green flashes (=deletion completed successfully).	

(\*4) - If the transmitter is memorised in "Mode 1" (see "Memorisation in "Mode 1""), any button can be pressed. If the transmitter is memorised in "Mode 2" (see "Memorisation in "Mode 2""), the entire procedure must be repeated for each memorised button that must be deleted.

### 7.4.2 DELETING THE RECEIVER'S MEMORY (FULLY)

In a one-way system, the code deletion procedures involve the receiver alone. In a two-way system, it will instead be necessary to delete the pairing also on the radio remote control.

To perform this procedure, consult the instruction manual of the relevant transmitter.

Table 16

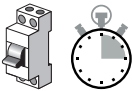


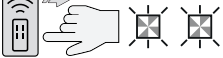



FULL DELETION OF THE RECEIVER'S MEMORY.	
Description	Symbols used
Press and hold the "Radio" button on the control unit and wait for LED "R" to light up green and switch off. It will start flashing after a few seconds.	
Deletion modes	
To delete the receiver's memory, release the "Radio" button precisely at the 5th flash.	
Wait for LED "R" on the control unit to make 5 rapid flashes. (Deletion completed successfully).	

### 7.4.3 LOCKING (OR RELEASE) OF MEMORISATIONS CARRIED OUT WITH THE “NEAR THE CONTROL UNIT” PROCEDURE AND/OR THROUGH THE “ENABLING CODE”

Through the procedure indicated in “**Table 17**”, it is possible to inhibit the memorisation of new transmitters in the receiver when attempting to use the “near the receiver” procedure (see “**Memorising a new transmitter “near the receiver”.**”) or the “enabling code” procedure (see “**Memorising a new transmitter using the “enabling code” of an old transmitter already memorised in the receiver**”)

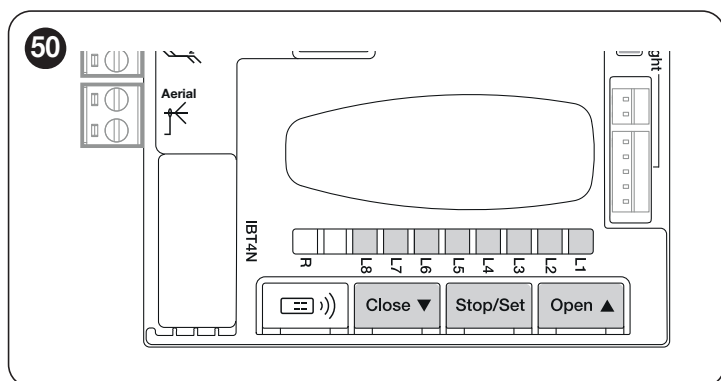
The default setting is “ON” for both procedures. To perform the following procedure it is necessary to have a transmitter already memorised in the receiver.

**Table 17**

LOCKING (OR RELEASE) OF MEMORISATIONS CARRIED OUT WITH THE “NEAR THE CONTROL UNIT” PROCEDURE AND/OR THROUGH THE “ENABLING CODE”	
Description	Symbols used
Disconnect the power supply by removing fuse F2 and the battery pack (if present). Wait 10 seconds.	OFF 10 s 
Press and hold the “Radio” button and simultaneously restore the power supply.	ON 
LED “R” will first emit signals relative to the memorised transmitters followed by short orange flashes.	
Release the “Radio” button precisely at the end of the second orange flash.	
Within 5 seconds repeatedly press and release the “Radio” button to choose one of the following functions, identifiable by the status of LED “R”:	< 5 sec >
No lock active = LED OFF	
Locking of the memorisation “near the control unit” = RED LED	
Locking of the memorisation with the “enabling code” = GREEN LED	
Locking of both memorisations (“near the control unit” and with “enabling code”) = ORANGE LED	
Within 5 seconds on a transmitter already memorised in the receiver, press and release a button (memorised) to save the function that has just been chosen	

## 8 PROGRAMMING THE CONTROL UNIT

There are 3 buttons on the control unit: **[Open ▲]**, **[Stop/Set]** and **[Close ▼]** (“**Figure 50**”) which can be used both to command the control unit and to programme the available functions.



The available programmable functions are grouped into **two levels** and their operating status is signalled by eight LEDs “**L1 ... L8**” located on the control unit (LED lit = function enabled; LED off = function disabled).

### 8.1 USING THE PROGRAMMING BUTTONS

#### **[Open ▲]**

The button can be used to command the automation's opening movement, or to shift the programming point upwards.

#### **[Stop/Set]**

Button used to stop a manoeuvre.

If pressed for more than 3 seconds, it allows for entering the programming mode.

#### **[Close ▼]**

The button enables the user to close the automation or shift the programming point downwards.



**Warning! During the manoeuvre, whether opening or closing is irrelevant, all the buttons perform the STOP function and stop the motor's movement.**

## 8.2 LEVEL 1 PROGRAMMING (ON-OFF)

All Level 1 functions are factory-set to “OFF” and can be modified at any time. To check the various functions, refer to “Table 18”.

### 8.2.1 LEVEL 1 PROGRAMMING PROCEDURE



The user has maximum 20 seconds to press the buttons consecutively during the programming procedure. After this time, the procedure terminates automatically and memorises the changes made up to that time.

To perform Level 1 programming:

1. press and hold the [Stop/Set] button until LED “L1” starts flashing
2. release the [Stop/Set] button
3. press the [Open ▲] or [Close ▼] button to move the flashing LED to the LED associated with the function to be modified
4. press and release the [Stop/Set] button immediately to change the status of the function:
  - short flash = OFF
  - long flash = ON
5. wait 20 seconds (maximum time), without pressing any button, to exit the programming mode.



To set other functions to “ON” or “OFF”, while the procedure is running, repeat points 2 and 3 during the phase itself.

Table 18

LEVEL 1 FUNCTIONS (ON-OFF)		
LED	Function	Description
L1	Automatic closing	This function causes the gate to close automatically after the programmed pause time has elapsed. The factory-set Pause Time is 30 seconds, but can be modified to 5, 15, 30, 45, 60, 80, 120 or 180 seconds. If the function has not been activated, the “semi-automatic” mode applies.
L2	Close after photo	This function enables the gate to be kept open for the necessary transit time only. The “Photo” always causes an automatic re-closing with a pause time of 5 seconds (regardless of the programmed value). The automation always reaches the fully open position (even if Photo is disengaged beforehand). When Photo disengages, automatic closing is triggered with a 5-second pause.
L3	Always Close	The “Always close” function will intervene, and the gate will close, if the open gate status is detected when the power supply returns. For safety reasons, the manoeuvre is preceded by 5 seconds of flashing. If the function is disabled, the automation will remain stationary once the power is restored
L4	Stand-by	This function allows for minimising consumption and is particularly useful in cases when the back-up battery is used. If this function is enabled, 1 minute after the completion of the manoeuvre the control unit turns off the transmitters of the BlueBus photocells and all the LEDs, with the exception of the BlueBus LED, which instead flashes at a slower speed. When a command arrives, the control unit resumes full operation. If this function is inactive, there will be no reduction in the consumption.
L5	Peak	If this function is activated, the gradual acceleration at the beginning of each manoeuvre will be disengaged; it allows for having surge force and is useful whenever static friction is high, e.g. if snow or ice are blocking the gate. If the thrust is inactive, the manoeuvre will start with a gradual acceleration.
L6	Pre-flashing	With the pre-flashing function, a 3-second pause is added between the flashing light switch-on and the start of the manoeuvre, in order to warn the user in advance of a potentially dangerous situation. If pre-flashing is inactive, the flasher will switch on when the manoeuvre starts.
L7	Deactivate internal radio	<b>Function ACTIVE:</b> deactivates the BiDi radio inside the control unit. <b>Function NOT ACTIVE:</b> normal operation. <b>Activate this function when using a type OXI external receiver.</b>
L8	Slave mode	By activating this function, <b>ROBUS</b> becomes a “Slave”: this allows for synchronising 2 motors on opposing leaves on which one motor functions as Master and the other as Slave; for further information, refer to the paragraph “ <b>Slave mode</b> ”.



During normal operation, in other words when no manoeuvre is under way, LEDs “L1 ... L8” are on or off depending on the status of the respective function; for example, “L1” is lit when the “Automatic Closing” function is enabled. During the manoeuvre, LEDs “L1 ... L8” flash to signal the force required to move the automation at that time. If “L1” flashes, the force required is low and so forth, until LED “L8” flashes to signal the maximum force. There is no relation between the force level indicated by the LEDs during the movement (which is an absolute value) and the level indicated by the LEDs during the force (which is a relative value) programming phase. See “L5” in “Table 19”.



### 8.3 LEVEL 2 PROGRAMMING (ADJUSTABLE PARAMETERS)

All the Level 2 parameters are factory-set as highlighted in “**GREY**” in “**Table 19**” and can be modified at any time. The parameters can be set to a scale of 1 to 8. The check the value corresponding to each LED, refer to “**Table 19**”.



**If the configuration of a parameter (Level 2) is not recognised with respect to the configurations present, the control unit will switch on the two LEDs L1 and L8 simultaneously and intermittently to signal that the present value is out of range. If necessary, the values can be forced by pressing the [Open ▲] or [Close ▼] button.**

#### 8.3.1 LEVEL 2 PROGRAMMING PROCEDURE



**The user has maximum 20 seconds to press the buttons consecutively during the programming procedure. After this time, the procedure terminates automatically and memorises the changes made up to that time.**

To perform Level 2 programming:

1. press and hold the [Stop/Set] button until LED “L1” starts flashing
2. release the [Stop/Set] button
3. press the [Open ▲] or [Close ▼] button to move the flashing LED to the “entry LED” associated with the parameter to be modified
4. press and hold the [Stop/Set] button. With the [Stop/Set] button pressed down:
  - wait roughly 3 seconds, until the LED representing the current level of the parameter to be modified lights up
  - press the [Open ▲] or [Close ▼] button to shift the LED associated with the parameter's value
5. release the [Stop/Set] button to return to the first level
6. wait 20 seconds (maximum time), without pressing any button, to exit the programming mode.



**To set multiple parameters during the procedure's execution, repeat the operations from point 2 to point 4 during the phase itself.**

**Table 19**

LEVEL 2 FUNCTIONS (ADJUSTABLE PARAMETERS)				
Entry LED	Parameter	LED (level)	Set value	Description
L1	Pause Time	L1	5 seconds	Adjusts the pause time, in other words, the time before automatic re-closure. It is only effective if the “Automatic Closing” function is enabled.
		L2	15 seconds	
		<b>L3</b>	<b>30 seconds</b>	
		L4	45 seconds	
		L5	60 seconds	
		L6	80 seconds	
		L7	120 seconds	
		L8	180 seconds	
L2	Step-by-Step function	L1	Open - Stop - Close - Stop	Controls the sequence of controls associated with the Sbs input or the 1st radio command. <b>NOTE:</b> by setting the level on <b>L4, L5, L7, L8</b> , also the behaviour of the “Open” and “Close” commands is modified.
		<b>L2</b>	<b>Open - Stop - Close - Open</b>	
		L3	Open - Close - Open - Close	
		L4	Condominium	
		L5	Condominium 2 (more than 2 sec triggers “Stop”)	
		L6	Step-by-Step 2 (more than 2 sec triggers “Partial Open”)	
		L7	Hold-to-run	
		L8	Opening in “semi-automatic” mode, closing in “hold-to-run” mode	
L3	Motor speed	L1	Speed 1 (30% - slow)	Adjusts the motor speed during normal manoeuvres.
		L2	Speed 2 (44%)	
		L3	Speed 3 (58%)	
		<b>L4</b>	<b>Speed 4 (72%)</b>	
		L5	Speed 5 (86%)	
		L6	Speed 6 (100% - fast)	
		L7	Open V4, close V2	
		L8	Open V6, close V4	

LEVEL 2 FUNCTIONS (ADJUSTABLE PARAMETERS)				
Entry LED	Parameter	LED (level)	Set value	Description
L4	OGI output	L1	<b>“Open Gate Indicator” (OGI) function</b>	Adjusts the function associated with the OGI output [regardless of the associated function, the output – when enabled – supplies a voltage of 24 V $\overline{\text{---}}$ (-30% +50%) with 10 W maximum power
		L2	Enabled if gate leaf closed	
		L3	Enabled if gate open	
		L4	Enabled with radio output no. 2	
		L5	Enabled with radio output no. 3	
		L6	Active with radio output no. 4	
		L7	Maintenance indicator	
		L8	Electric lock	
L5	Motor force	L1	Ultra-light gate	Adjusts the system that controls the motor force in order to adapt it to the weight of the automation. The force control system also measures the ambient temperature, automatically increasing the force in the event of particularly low temperatures
		L2	Very light gate	
		L3	Light gate	
		L4	Average gate	
		L5	<b>Medium-heavy gate</b>	
		L6	Heavy gate	
		L7	Very heavy gate	
		L8	Ultra-heavy gate	
L6	Partial Open	L1	0,5 mt	Adjusts the measurement of the partial opening
		L2	<b>1 mt</b>	
		L3	1,5 mt	
		L4	2 mt	
		L5	2,5 mt	
		L6	3 mt	
		L7	3,4 mt	
		L8	4 mt	
L7	Maintenance notification	L1	1.000	Adjusts the number of manoeuvres after which the automation maintenance request is triggered.
		L2	2.000	
		L3	4.000	
		L4	<b>7.000</b>	
		L5	10.000	
		L6	15.000	
		L7	17.000	
		L8	20.000	
L8	List of malfunctions	L1	<b>Result of 1<sup>st</sup> manoeuvre (most recent)</b>	Allows for checking the type of anomaly that occurred in the last 8 manoeuvres (refer to the paragraph <b>“Anomaly log”</b> ).
		L2	Result of 2 <sup>nd</sup> manoeuvre	
		L3	Result of 3 <sup>rd</sup> manoeuvre	
		L4	Result of 4 <sup>th</sup> manoeuvre	
		L5	Result of 5 <sup>th</sup> manoeuvre	
		L6	Result of 6 <sup>th</sup> manoeuvre	
		L7	Result of 7 <sup>th</sup> manoeuvre	
		L8	Result of 8 <sup>th</sup> manoeuvre	

- All the parameters can be adjusted as required without any contraindications; only the “Motor force” adjustments could require special attention:
- high force values should not be used to compensate for points of abnormal friction on the leaf. Excessive force can jeopardise the operation of the safety system or damage the leaf
  - if the “Motor Force” control is used to aid the impact force reduction system, measure the force again after each adjustment in accordance with the EN 12453 standard
  - wear and weather conditions may affect the automation’s movement, therefore periodic readjustments of the motor force may be necessary.

## 8.4 SPECIAL FUNCTIONS

### 8.4.1 “ALWAYS OPEN” FUNCTION

The “Always open” function is a control unit feature that enables the user to always command an opening manoeuvre when the “**Step-by-Step**” command lasts longer than 2 seconds; this is useful, for example, for connecting a timer contact to the SbS terminal in order to keep the automation open for a certain time frame.

This feature is valid regardless of how the “SbS” input is programmed, unless it is programmed to perform the “Condominium 2” function. Refer to the “**Step-by-Step function**” under the “**Level 2 programming (adjustable parameters)**” paragraph.

### 8.4.2 “MOVE ANYWAY” FUNCTION

This function can be used to operate the automation even one or more safety devices fail to work properly or are out of order. The automation can be controlled in “**hold-to-run**” mode by proceeding as follows:

1. send a command to move the automation, using a transmitter or key selector, etc. If everything works properly, the boom will move normally, otherwise proceed with point 2
2. within 3 seconds, press the control again and hold it down
3. after roughly 2 seconds, the automation will complete the requested manoeuvre in “**hold-to-run**” mode, in other words, it will continue to move so long as the control is held down.



**When the safety devices fail to work, the flashing indicator will flash a few times to signal the type of problem. To verify the type of anomaly, consult the “*Signalling through warning light*” chapter (page 40).**

### 8.4.3 “MAINTENANCE NOTICE” FUNCTION

This function warns the user when the automation requires a maintenance check. The number of manoeuvres after which the signal is given can be configured through the MyNicePro app or through all compatible Nice interfaces.

At the start of each manoeuvre, the automation switches on the green or red light to signal the maintenance status according to the behaviour described in the table below:

Table 20

MAINTENANCE NOTICE		
LED light	Live	Description
Green	steady lit at the start of each manoeuvre	Normal operation
Red	steady lit at the start of each manoeuvre	We recommend subjecting the entire automation to maintenance by qualified personnel

## 8.5 WI-FI CONNECTION

**ROBUS** motors are configured for Wi-Fi connectivity for enabling:

- remote control of the automation (through the MyNice app)
- the installer: configuration of the automation (through the MyNice Pro app)

In particular, Wi-Fi connectivity is available with three modes:

- Wi-Fi module integrated in the control unit (if included in the purchased model)
- The BiDi-Wifi interface supplied on request as an accessory
- The Proview interface (only for the MyNice Pro app) supplied on request as an accessory



**The application of the BiDi-Wi-Fi interface to the busT4 port present on the automation must be regarded as alternative to the BiDi-ZWave interface.**

To use the automation’s Wi-Fi connectivity in the available modes, it is necessary to:

- Install, depending on the desired use, the MyNice app or the MyNice Pro app (reserved for the installer) available on Google Play Store and Apple App Store
- Power the automation and verify that the available Wi-Fi device switches on normally
- Launch the installed app and configure the Wi-Fi device from the “Wi-Fi interface or Accessories” menu

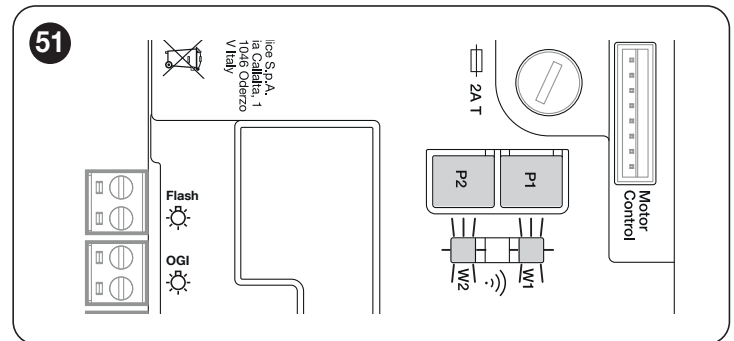
For further details relative to the functions linked to the MyNice Pro and MyNice apps, consult the website [www.niceforyou.com](http://www.niceforyou.com).

### 8.5.1 INTEGRATED WI-FI MODULE (DEPENDING ON THE VERSION)

The module integrated in the control unit has 2 buttons (P1 and P2) and 2 LED (W1 and W2): these behave differently on the basis of the various operating phases.

Indicated below are the buttons and LEDs with which the user can interact:

- W1 = Power/Sys (power LED and integrated Wi-Fi module status LED)
- W2 = Wi-Fi / BT (Wi-Fi communication status LED)
- P1 = 10 s pressing = resetting of factory settings
- P2 = not used



**WARNING = To install on and associate a device with the control unit, follow the guided procedure present in the MyNice or MyNice Pro app. For further information, consult the website [www.niceforyou.com](http://www.niceforyou.com)**

“Table 21” illustrates the signals emitted by LEDs **W1** and **W2** and their meaning.

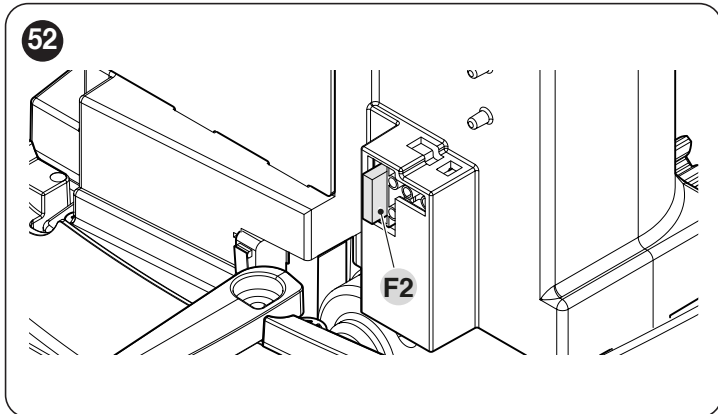
Table 21

WI-FI MODULE LED STATUS			
WiFi /BT (W2)	Power/Sys (W1)	LEDs W1 and W2 status	Description
Lit green	Lit green	Stable	The integrated module is in its normal operating status and a smartphone is connected.
Lit green	Green, 8 quick flashes	Temporary (a few seconds)	The module has undergone an “Identify” action by the user.
Flashing green	Lit green	Stable	The module is awaiting to receive the Wi-Fi network configuration from the user. Use the app to configure the module.
Lit orange	Lit green	Stable	The module is in its normal operating status and no smartphone is connected.
Flashing orange	Steady green	Temporary (a few seconds)	The module is configuring the Wi-Fi connection. If permanent, it means that a problem occurred during the Wi-Fi configuration.
OFF	Steady green	Stable	The module cannot be configured because 30 minutes have passed from the switching on (only with a module that has not yet been configured). To configure the module, disconnect the power supply to the control unit and then restore it.
OFF	Flashing orange	Temporary (roughly 1 minute)	The module is updating. Wait for the operation to be completed. If the operation is not completed correctly, the module automatically restarts after 5 minutes.
Flashing red	OFF	Transitory	The module has detected the pressing of the reset button when the control unit was switched on.
Steady red	Lit green	Stable	The module cannot connect to the domestic Wi-Fi network or is unable to connect to the Nice cloud.

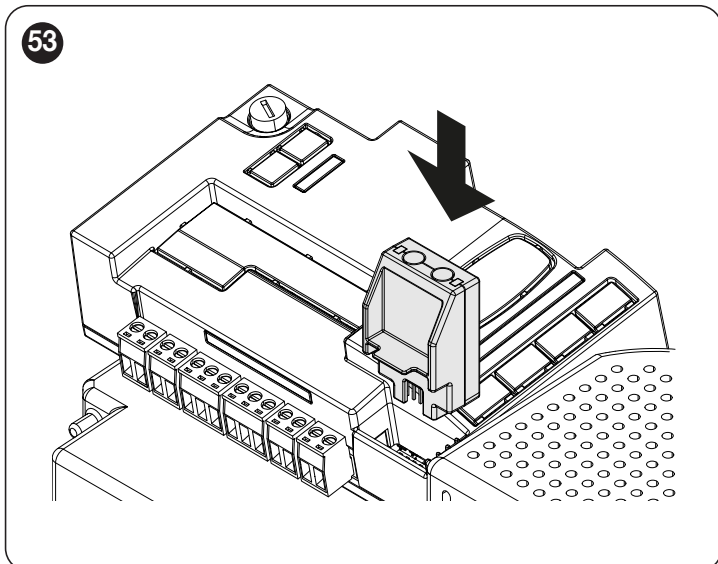
### 8.5.2 BIDI-WI-FI INTERFACE

To connect the BiDi-Wi-Fi interface:

1. Disconnect the power supply to the control unit by removing the fuse F2 and, if necessary, the emergency power supply



2. Verify that all the control unit LEDs are switched off before proceeding  
Insert the BiDi-Wi-Fi interface in the BUS T4 connector of the control unit



**Warning! If it is not correctly inserted, the BiDi-Wi-Fi interface could get damaged or permanently damage the control unit.**

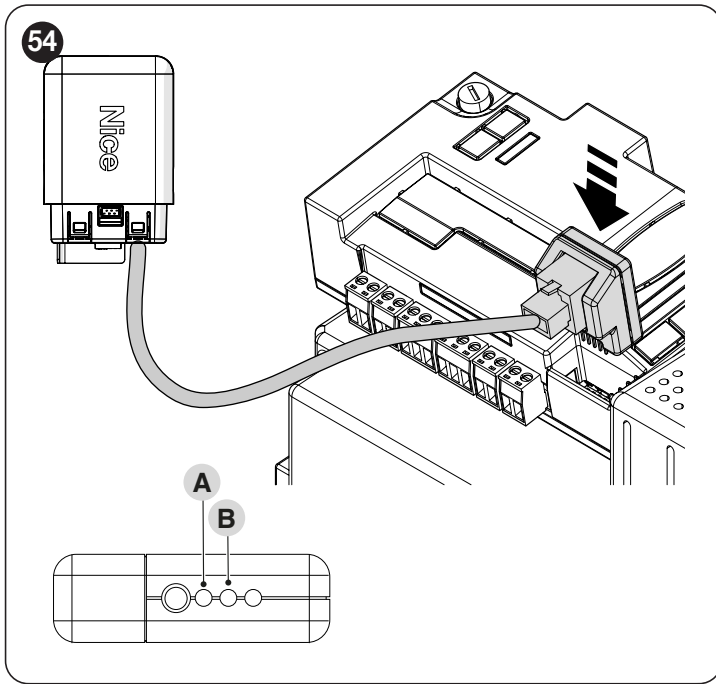
3. Insert fuse F2 to switch the control unit on again
4. Wait for the **Date** LED to start flashing
5. Configure the interface through the app
6. Wait until the **Date** LED switches on and the green light stays steady lit. At this point the configuration will have been completed.



**For further details relative to the functions linked to the BiDi-Wi-Fi interface, consult the website [www.niceforyou.com](http://www.niceforyou.com).**

## 8.6 CONNECTING THE PRO-VIEW

The control unit has a BusT4 connector to which it is possible to connect, through the IBT4N interface, the “Pro-View” interface, which allows for fully and rapidly managing the installation, maintenance and diagnosis of the entire automation through a Wi-Fi connection and the MyNice Pro app. Once properly powered, the ProView automatically creates a Wi-Fi network to which the user can connect. When the ProView accessory is correctly paired, the “power status” LED (A) and the “Wi-Fi status” LED (B) are lit green.




 For further details relative to the functions linked to the Pro-View interface and the MyNice Pro app, consult the website [www.niceforyou.com](http://www.niceforyou.com).


## 8.7 Z-WAVE™

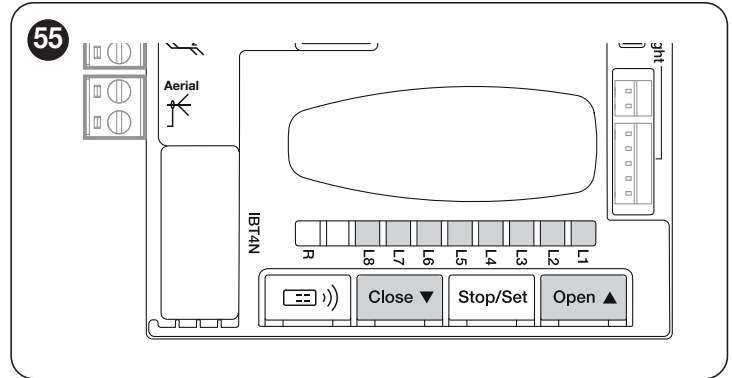
The **ROBUS** motors are compatible with the Z-Wave™ protocol to enable the user to manage all the automation's functions in an extremely simple way, through the Z-Wave™ gateway app installed at home. In particular, the Z-Wave™ connectivity is available with the BiDi-ZWave interface which can be used to control the movement and status of the automations.

 The application of the BiDi-ZWave interface to the busT4 port present on the automation must be regarded as alternative to the BiDi-Wi-Fi interface.

 For further details relative to the functions linked to the BiDi-ZWave interface, consult the website [www.niceforyou.com](http://www.niceforyou.com).

## 8.8 MEMORY DELETION


 The procedure described below restores the control unit's default settings. All the custom settings will be lost.



To delete the control unit's memory and restore all the default settings, proceed as described below:

1. press and hold the [Open ▲] and [Close ▼] buttons until the programming LEDs “L1-L8” light up (after roughly 3 seconds)
2. release the buttons
3. if the operation was successful, the programming LEDs “L1” to “L8” flash quickly for 3 seconds.

 With this procedure it is possible to also delete any errors left in the memory.

 This procedure does not cancel the radio codes memorised in the radio receiver (integrated and/or external)

## 9.1 TROUBLESHOOTING

The table below contains useful instructions to resolve any malfunctions or errors that may occur during installation or in case of a fault.

Table 22

TROUBLESHOOTING	
Problems	Recommended checks
The radio transmitter does not control the automation and the LED on the transmitter fails to light up	Check whether the transmitter batteries are exhausted and replace them if necessary.
The radio transmitter does not control the automation but the LED on the transmitter lights up	Check whether the transmitter has been memorised correctly in the radio receiver.
No manoeuvre is commanded and the "OK" LED fails to flash	Check that the gearmotor is being powered with the mains voltage Check whether fuses <b>F1</b> and <b>F2</b> are blown; if they are, identify the cause of the failure then replace the fuses with others having the same current rating and characteristics.
No manoeuvre starts and the warning light is off	Check that the command is actually received. If the command reaches the SbS input, the "OK" LED must light up; if instead the radio transmitter is used, the "OK" LED must emit two quick flashes.
No manoeuvre starts and the warning light flashes a few times	Count the number of flashes and check the corresponding value in " <b>Signalling through warning light</b> ".
The manoeuvre starts but is immediately followed by a reverse run	The selected force could be too low for this type of automation. Check whether there are any obstacles and increase the force if necessary. Check whether a safety device connected to the Stop input has tripped.
The manoeuvre is completed correctly but the warning light does not work	Make sure that there is voltage on the warning light's FLASH terminal during the manoeuvre (being intermittent, the voltage value is not significant: roughly 10–30 V $\pm$ ); if there is voltage, the problem is due to the lamp, which must be replaced with one having the same characteristics; if there is no voltage, there may have been an overload on the FLASH output. Check that the cable has not short-circuited.

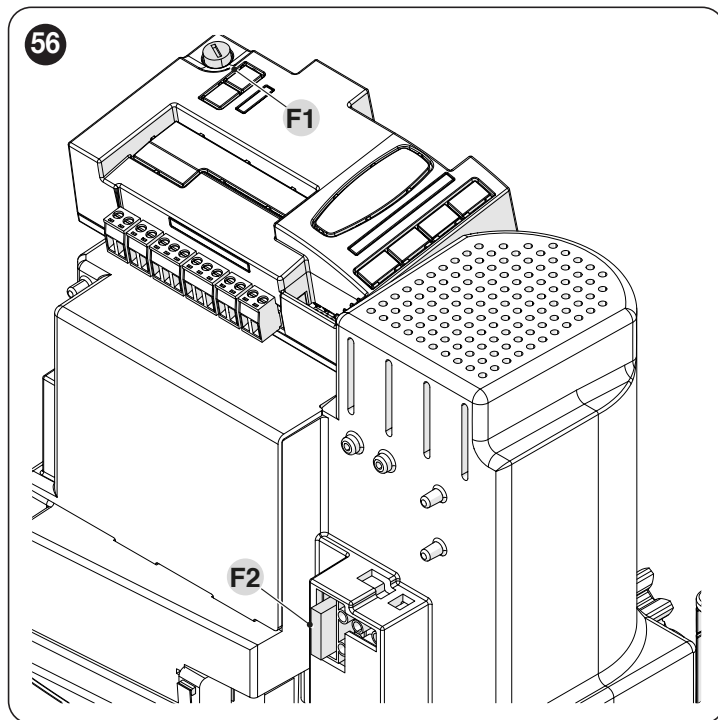


Table 23

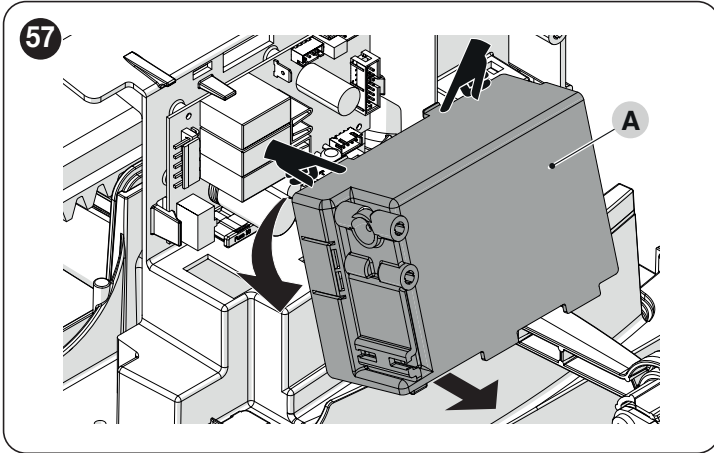
CHARACTERISTICS OF FUSES F1 AND F2

<b>F1</b>	Control unit fuse = 2 A delayed
<b>F2</b>	Mains power supply fuse = 1.6 A delayed

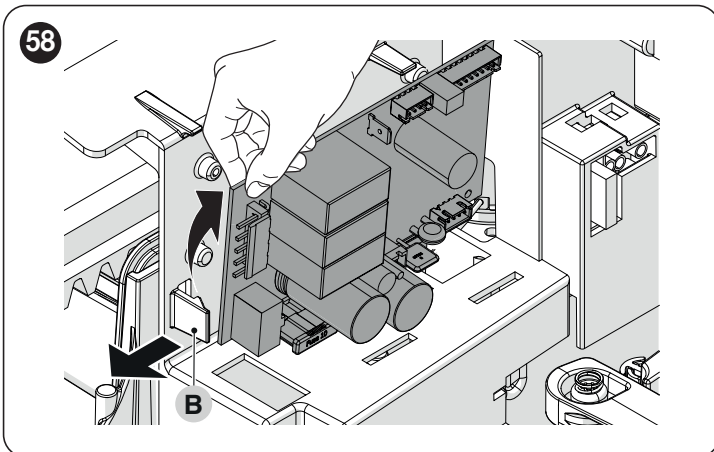
## 9.2 REPLACING THE MOTOR CONTROL CARD

In case of a malfunction, the motor control card can be replaced by performing the procedures described below

1. Disconnect the power supply to the control unit by removing the fuse F2 and, if necessary, the emergency power supply
2. Remove any cables
3. Remove the control unit (refer to "**Removing the control unit**" for relevant information)
4. Press the plastic cover (A) in the indicated points and remove it



1. Hold the card with one hand
2. Shift the plastic stop (B) towards the left
3. Remove the card and replace it with a conforming version



### 9.3 SIGNALLING THROUGH WARNING LIGHT

During the manoeuvre, the "FLASH" warning light flashes once every second; whenever anomalies occur, shorter flashes are emitted; the flashes are repeated twice with a one-second pause in between.

Table 24

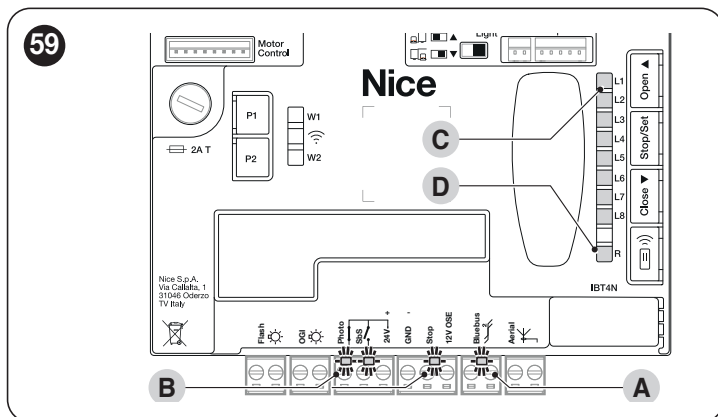
FLASH WARNING LIGHT SIGNALS		
Fast flashes	Cause	ACTION
2 flashes 1-second pause 2 flashes	Intervention of a photocell	At the start of the manoeuvre, one or more photocells are blocking the movement; check whether there are any obstacles. During the manoeuvre, this is normal if an obstacle is present.
3 flashes 1-second pause 3 flashes	Intervention of the "Motor Force" limiter	During its movement, the automation experienced excessive friction; identify the cause.
4 flashes 1-second pause 4 flashes	Triggering of the STOP input	At the start of the manoeuvre or during the movement, the STOP input intervened; identify the cause.
5 flashes 1-second pause 5 flashes	Internal parameter memorisation error	Wait at least 30 seconds, then try giving a command. If the condition persists, it means there is a malfunction and the electronic board has to be replaced.
6 flashes 1-second pause 6 flashes	The maximum number of manoeuvres per hour limit has been exceeded	Wait for a few minutes until the manoeuvre limiting device drops to under the maximum limit.
7 flashes 1-second pause 7 flashes	Error in the internal electric circuits	Disconnect all the power circuits for a few seconds and then try giving a command again; if the condition persists, it means there is a serious fault on the electronic board or on the motor cabling. Perform any necessary checks and replacements.
8 flashes 1-second pause 8 flashes	Command already present	Another command is already present. Remove the command present to be able to send other commands.
9 flashes 1-second pause 9 flashes	Automation stopped	The automation was stopped by a "Stop automation" command

### 9.4 SIGNALS ON THE CONTROL UNIT

The control unit has a series of LEDs, each of which can emit special signals both during regular operation and when an anomaly occurs.

For further information, refer to "Table 27" and "Table 28"

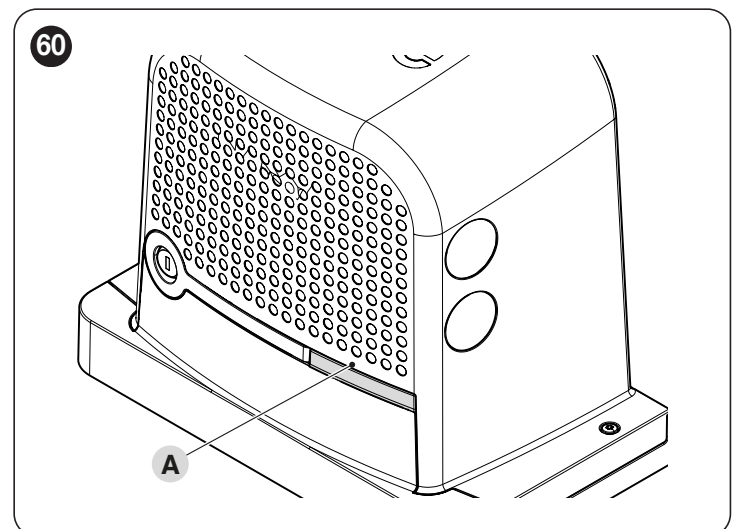
- A BlueBus LED
- B Led Photo, Sbs, Stop
- C "L1 ... L8" programming LEDs
- D Led Radio "R"



### 9.5 LUMINOUS SIGNALS

#### 9.5.1 STATUS LIGHT

The motor status light (A) ("Figure 60") is made up of 2 colours (red and green) and has the function of signalling any anomalies. "Table 25" shows the potential switch-on statuses.





## Status light with positions already learned

Table 25

STATUS LIGHT	
<b>Green light</b>	
<b>Lit</b>	The light remains on at the start of each manoeuvre if there are no anomalies in the system and switches off when the manoeuvre terminates.
<b>Off</b>	Normal operation
<b>Red light</b>	
<b>Lit</b>	The light remains on at the start of each manoeuvre if the set number of manoeuvres for maintenance has been exceeded and switches off when the manoeuvre terminates.
<b>Off</b>	Normal operation.
<b>Warning light</b>	The control unit has detected an anomaly: Refer to " <b>Table 24</b> "

## Status light with positions not learned

Table 26

STATUS LIGHT	
<b>Green light</b>	
<b>Lit</b>	The light switches on when the opening limit switch is reached.
<b>Off</b>	Normal operation
<b>Red light</b>	
<b>Lit</b>	The light switches on when the closing limit switch is reached.
<b>Off</b>	Normal operation.
<b>Warning light</b>	The control unit has detected an anomaly: Refer to " <b>Table 24</b> "

## 9.5.2 CONTROL UNIT LED

Table 27

TERMINAL LEDS ON THE CONTROL UNIT		
Status	Meaning	Possible solution
<b>BlueBus LED</b>		
<b>OFF</b>	Anomaly	Check for the presence of power; check that the fuses are not blown; if necessary, identify the cause of the fault then replace them with fuses having the same specifications.
<b>On</b>	Serious anomaly	There is a serious anomaly; try switching off the control unit for a few seconds; if the condition persists, it means that there is a fault and the electronic circuit board must be replaced.
<b>2 green flashes per second</b>	Everything normal	Normal control unit operation.
<b>2 quick green flashes</b>	The status of the inputs has changed	This is normal when there is a change in one of the inputs: SBS, STOP, OPEN, CLOSE, the photocells intervene or the radio transmitter is used.
<b>A series of flashes separated by a 1-second pause</b>	Various	Refer to that shown in " <b>Signalling through warning light</b> ".
<b>A series of quick and extended red flashes</b>	Short circuit on the BlueBUS terminal clamp	Disconnect the terminal and verify the cause of the short-circuit on the BlueBUS connections. If the short-circuit is resolved, the LED will start flashing normally after about ten seconds.
<b>STOP LED</b>		
<b>OFF</b>	Intervention of the STOP input	Check the devices connected to the STOP input.
<b>On</b>	STOP did not intervene	STOP input active.
<b>SbS LED</b>		
<b>OFF</b>	Everything normal	SbS input not active.
<b>On</b>	Intervention of the SbS input	This is normal if the device connected to the SbS input is actually active.
<b>Led PHOTO</b>		
<b>OFF</b>	Intervention of the PHOTO input	PHOTO input intervened.
<b>On</b>	Everything normal	This is normal if the safety device did not intervene.

LEDS ON THE CONTROL UNIT BUTTONS	
<b>LED 1</b>	<b>Description</b>
<b>OFF</b>	During normal operation, this indicates that “Automatic Closing” is disabled.
<b>On</b>	During normal operation, this indicates that “Automatic Closing” is active.
<b>Flashes</b>	Function programming in progress. If it flashes together with “L2”, it means that the device learning phase must be carried out (refer to the “ <i>Device learning</i> ” paragraph).
<b>LED 2</b>	<b>Description</b>
<b>OFF</b>	During normal operation, it signals that the “Close after photo” mode is not active.
<b>On</b>	During normal operation, it signals that the “Close after photo” mode is active.
<b>Flashes</b>	Function programming in progress. If it flashes together with “L1”, it means that the device learning phase must be carried out (see the “ <i>Device learning</i> ” paragraph)
<b>LED 3</b>	<b>Description</b>
<b>OFF</b>	During normal operation, this indicates that “Always Close” is not active.
<b>On</b>	During normal operation, it signals that “Always close” is active.
<b>Flashes</b>	Function programming in progress. If it flashes together with L4, it means that the leaf opening and closing positions must be learned (refer to the “ <i>Leaf length learning</i> ” paragraph).
<b>LED 4</b>	<b>Description</b>
<b>OFF</b>	During normal operation, it signals that the “Stand-by” mode is not active.
<b>On</b>	During normal operation, it signals that the “Stand-by” mode is active.
<b>Flashes</b>	Function programming in progress. If it flashes together with L3, it means that the leaf opening and closing positions must be learned (refer to the “ <i>Leaf length learning</i> ” paragraph).
<b>LED 5</b>	<b>Description</b>
<b>OFF</b>	During normal operation, it indicates that the “Peak” mode is not active.
<b>On</b>	During normal operation, it signals that the “Peak” mode is active.
<b>Flashes</b>	Function programming in progress.
<b>LED 6</b>	<b>Description</b>
<b>OFF</b>	During normal operation, it signals that the “Pre-flashing” mode is not active.
<b>On</b>	During normal operation, it signals that the “Pre-flashing” mode is active.
<b>Flashes</b>	Function programming in progress.
<b>LED 7</b>	<b>Description</b>
<b>OFF</b>	During normal operation, it indicates that “Internal radio inhibition” is not enabled.
<b>On</b>	During normal operation, it indicates that “Internal radio inhibition” is enabled.
<b>Flashes</b>	Function programming in progress.
<b>LED 8</b>	<b>Description</b>
<b>OFF</b>	During normal operation, it signals that <b>ROBUS</b> is configured as master.
<b>On</b>	During normal operation, it signals that <b>ROBUS</b> is configured as slave.
<b>Flashes</b>	Function programming in progress.



If the configuration of a parameter (Level 2) is not recognised with respect to the configurations present, the control unit will switch on the two LEDs L1 and L8 simultaneously and intermittently to signal that the present value is out of range. If necessary, the values can be forced by pressing the [Open ▲] or [Close ▼] button.























**Warning!** During each manoeuvre, the LEDs light up to signal the force applied by the motor to move the automation.

During each manoeuvre, the LEDs light up proportionally to signal the force applied by the motor to move the automation. Below is the sequence with which the LEDs light up in relation to the force:

- from L1 to L3 in case of low force
- from L1 to L5 in case of medium force
- from L1 to L8 in case of high force.














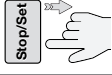
**WARNING:** with the motor stationary, the sequential lighting up of LEDs L1 →L2 →L3 →L4 →L5 →L6 →L7 →L8 indicates that the product’s FW is being updated, so it is necessary to wait for the updating process to end before the automation can be used again! We suggest not disconnecting the motor from the power supply.

<b>SIGNAL OF LED R ON THE CONTROL UNIT</b>		
<b>Long flashes &gt; GREEN at start-up</b>		
Current encoding system: "O-Code"	2	
No remote control memorised	5	
<b>Long flashes &gt; GREEN during operation</b>		
Indicates that the code received is not stored in the memory	1	
Saving of the code in memory	3	
Memory deleted	5	
During programming, indicates that the code is not authorised for memorisation	6	
During programming, indicates that the memory is full	8	
<b>Short flashes &gt; GREEN</b>		
"Certificate" not valid for memorisation	1	
During programming, it indicates that the code cannot be memorised because it transmits the "certificate"	2	
Output in "Mode 2" not managed on the control unit	4	
During the deletion procedure, indicates that the code has been deleted	5	
"Certificate" with lower priority than the admissible level	5	
Code synchronisation failure	6	
<b>Long flashes &gt; RED</b>		
Non-original code block	1	
Code with lower priority than the authorised level	2	
<b>Short flashes &gt; RED</b>		
"In vicinity" programming block	1	
"Certificate" memorisation block	1	
Memory block (PIN entry)	2	
<b>Long flashes &gt; ORANGE</b>		
(At start-up, after a few green flashes). Indicates the presence of two-way transmitters	1	
<b>Short flashes &gt; ORANGE</b>		
Indicates activation of block programming (at start-up)	2	

## 9.7 ANOMALY LOG

**ROBUS** can display any faults that have occurred in the last 8 manoeuvres, for example interruption of a manoeuvre due to activation of a photocell or sensitive edge. To check the list of anomalies, proceed as indicated in “**Table 30**”.


**Table 30**

FAULT LOG			
Description	Symbols used		
Press and hold the [Stop/Set] button for roughly 3s		3s	
Release the [Stop/Set] button when LED L1 starts flashing			L1
Press and release the [Open ▲] or [Close ▼] button to shift flashing of the LED to L8 for the “Anomaly list” parameter			
Press and hold the [Stop/Set] button, which must be kept pressed throughout next steps			
Wait roughly 3 seconds after which the LEDs corresponding to the faulty manoeuvres will light up. LED L1 indicates the result of the last manoeuvre and LED L8 indicates the result of the eighth manoeuvre. If the LED is on, this means that faults occurred during the manoeuvre; if the LED is off, this means that no fault occurred during the manoeuvre			
Press and release the [Open ▲] and [Close ▼] buttons to select the desired manoeuvre: The corresponding LED emits a number of flashes equal to those normally emitted by the flashing light after an anomaly			
Release the [Stop/Set] button			

## 10 FURTHER DETAILS (Accessories)

### 10.1 ADDING OR REMOVING DEVICES

Once the automation has been assembled, it is possible to add or remove devices at any time. In particular, various types of devices can be connected to the “BlueBUS” and “STOP” inputs, as described in the following paragraphs.

 After having added or removed devices, these must be learned as described in the “Learning of other devices” paragraph.

#### 10.1.1 BLUEBUS

BlueBus is a technology that allows for connecting compatible devices using only two wires that carry both the power supply and the communication signals. All the devices are connected in parallel on the 2 wires of the BlueBus itself. It is not necessary to observe any polarity; each device is individually recognised because a unique address is assigned to it during the installation.

The following devices can be connected to the BlueBUS: photocells, safety devices, control buttons, signalling lights, etc. The control unit recognises all the connected devices individually through an appropriate learning phase, and can detect all possible anomalies with absolute precision.

For this reason, whenever a device is connected to or removed from BlueBUS, the learning phase must be carried out on the control unit, as described in the “Learning of other devices” paragraph.

#### 10.1.2 STOP INPUT

STOP is the input that causes the immediate interruption of the manoeuvre, followed by a brief inversion. Devices with output featuring normally open “NO” contacts and devices with normally closed “NC” contacts, as well as devices with 8.2 kΩ fixed resistor output, such as sensitive edges, can be connected to this input.

During the device learning phase, the control unit recognises the type of device connected to the STOP input and later, during normal use of the automation, the control unit commands a STOP when it senses a change with respect to the acquired situation.

Multiple devices, even of different types, can be connected to the STOP input if suitable arrangements are made:

- Any number of NO devices can be connected to each other in parallel.
- Any number of NC devices can be connected to each other in series.
- Two devices with 8.2 kΩ fixed resistor output can be connected in parallel; if there are more than 2 devices then they must all be connected in cascade, with a single 8.2 kΩ terminating resistor.
- It is possible to combine two NO and NC contacts by placing them in parallel, while also mounting a 8.2 kΩ resistor in series with the NC contact (this also allows for combining 3 devices: NA, NC and 8.2 kΩ).

If the STOP input is used to connect devices with safety functions, only the devices with 8.2 kΩ constant resistance guarantee Category 3 safety against faults in accordance with the EN 954-1 standard.

#### 10.1.3 I/O EXPANSION BOARD (OPTIONAL ACCESSORY)

The control unit is configured for housing various versions of I/O expansion boards which make available additional inputs and outputs. Each additional input/output can be personalised as if it were a physical input/output of the control unit.

Whenever an expansion board is inserted or removed, the “device acquisition” procedure must be carried out: if this is not done, the motor’s movement will remain limited to the “hold-to-run” function.

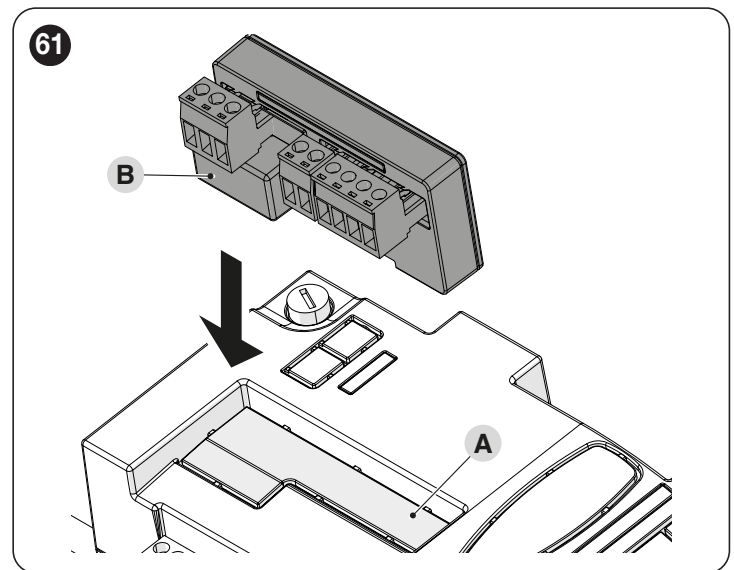


**The addition or removal of expansion boards must always be carried out without power supply (by removing both fuse F2 and, if present, the battery pack).**

To add the expansion board:

1. disconnect the control unit from the power supply
2. remove the pre-detachment element (A)
3. fit the expansion (B) into the appropriate slot on the control unit circuit board.
4. power the control unit
5. repeat the learning procedure for the devices as described in the paragraph “Learning of other devices”.

#### 10.1.4 I/O EXPANSION BOARD (OPTIONAL ACCESSORY)

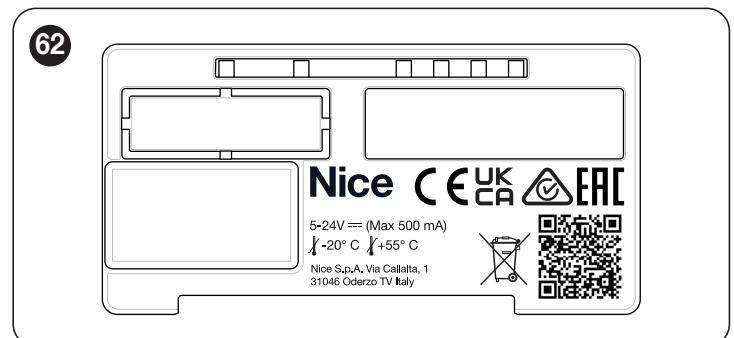


**Warning! On some models the expansion board is supplied as a standard feature**



**Warning! Verify the electrical consumption of the control unit and of the expansion board. Do not exceed the maximum allowed power.**

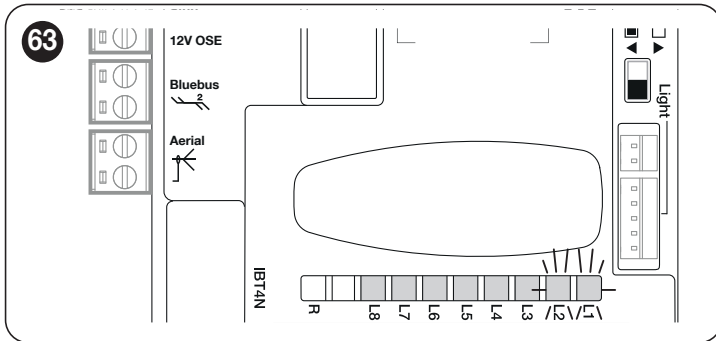
The specific manual of the expansion board is available on-line. Use your smartphone to frame the QR Code of the board.



EXPANSION BOARD			
Product	Description	Input characteristics	Output characteristics
MLAE44	4 Input 4 Output	IN 3 = dry contact (COM - IN3) IN 4 = dry contact (COM - IN4) IN 5 = dry contact (COM - IN5) IN 6 = dry contact (COM - IN6)	OUT3 = Open Drain (max 10W = 24V - 0.4A) OUT4 = Open Drain (max 10W = 24V - 0.4A) OUT5 = Open Drain (max 10W = 24V - 0.4A) OUT6 = Open Drain (max 10W = 24V - 0.4A)
MLAE22	2 Input 2 Output	IN 3 = dry contact (COM - IN3) IN 4 = dry contact (COM - IN4)	OUT3 = Open Drain (max 10W = 24V - 0.4A) OUT4 = dry contact with relay in exchange (230VAc - 5A)
MLAE21	2 Input 1 Output	IN 3 = dry contact (COM - IN3) IN 4 = dry contact (COM - IN4)	OUT3 = Open Drain (max 10W = 24V - 0.4A)

### 10.1.5 LEARNING OF OTHER DEVICES

Normally the learning of devices connected to “BlueBus” and the “STOP” input takes place during the installation stage; however, if new devices are added or old ones removed, the learning process can be redone.



To do this:

1. simultaneously press and hold the [Open ▲] and [Stop/Set] buttons
2. release the buttons when LEDs “L1” and “L2” start flashing rapidly (after roughly 3 seconds)
3. wait a few seconds until the control unit has completed the device learning phase
4. at the end of this phase, the “Stop” LED must be lit, LEDs “L1” and “L2” must switch off, while LEDs “L1...L8” will switch on depending on the status of the ON-OFF functions they represent.



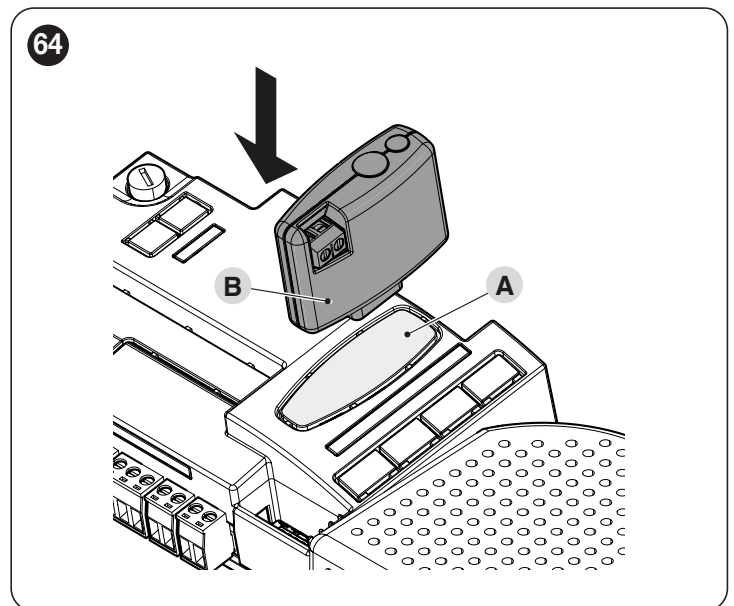
**After having added or removed devices, the automation test must be carried out again as specified in the “Testing” paragraph.**

### 10.1.6 CONNECTING AN SM-TYPE RADIO RECEIVER (OPTIONAL ACCESSORY)

The control unit has a slot for mounting radio receivers with SM connector (optional accessories) belonging to the OXI, OXIBD, etc. families, which can be used to remotely control the control unit through radio transmitters. Before proceeding with the installation of a receiver, inhibit the operation of the internal radio (refer to the paragraph “Level 1 programming (ON-OFF)”) and disconnect the power supply to the control unit.

To install a receiver: “Figure 64”

1. inhibit the operation of the internal radio (refer to the paragraph “Level 1 programming (ON-OFF)”) (A)
2. remove the pre-detachment element (A)
3. fit the receiver (B) into the appropriate slot on the control unit circuit board
4. power the control unit



For the commands available and the memorisation modes, refer to the modes relevant to the programming of the integrated radio receiver. (refer to the “RADIO PROGRAMMING” chapter).

### 10.1.7 COURTESY LIGHT

Table 32

STATUS LIGHT	
White light*	
Lit	The automation is moving or has just stopped. It will switch off automatically after the programmed time.
Lit for 3 seconds	Execution of an Automation Lock Command completed.
Off	Normal operation / motor stopped pending commands.

\* Accessory available only for **ROBUS** RBS600HS.

## 10.1.8 RELAY PHOTOCELLS WITH PHOTOTEST FUNCTION

The control unit features a PHOTOTEST function which increases the reliability of the safety devices, enabling it to be classified in Category 2 in accordance with the EN 13849-1 standard regarding the combination of the control unit and safety photocells.

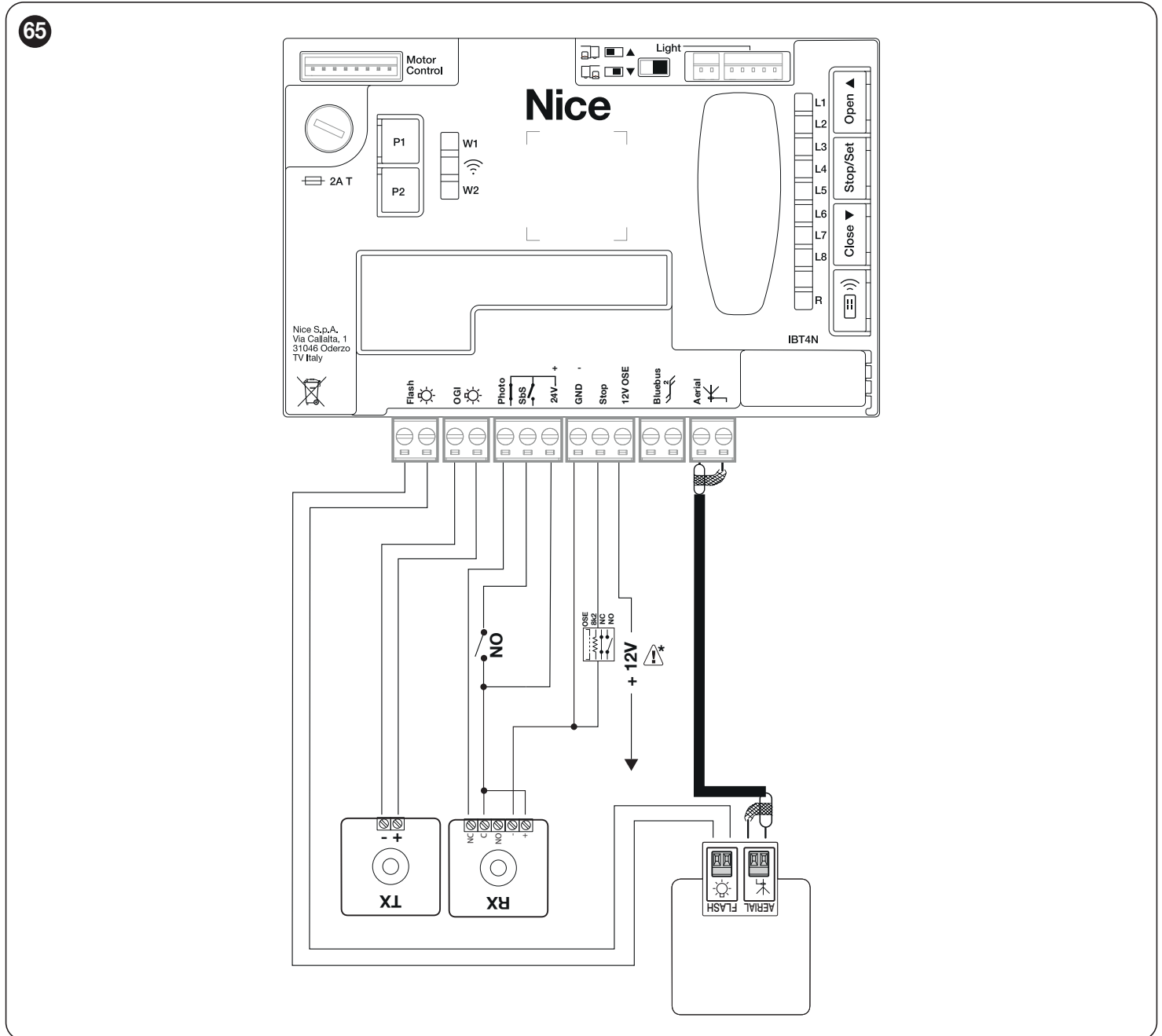
**Warning! To activate the PHOTOTEST function, it is necessary to modify the configuration through the compatible Wi-Fi interfaces and the MyNice Pro app**

Whenever a manoeuvre is started, all safety devices involved are checked and only if everything operates correctly will the manoeuvre start. Should the test fail (photocell blinded by the sun, cables short-circuited, etc.), the fault is identified and the manoeuvre is disabled.

Connect the photocells as shown in **“Figure 65”**.

### Wiring diagram with relay photocells with PHOTOTEST

**All images of the accessories are included purely for illustration purposes.**



**Hand icon:** If 2 pairs of photocells are used that interfere with one another, it is necessary to activate the “synchronisation” as described in the photocell instruction manual.

**Hand icon:** In any devices of the automation are replaced, added or removed, it is necessary to run the learning procedure (see the “Device learning” chapter on page 21).

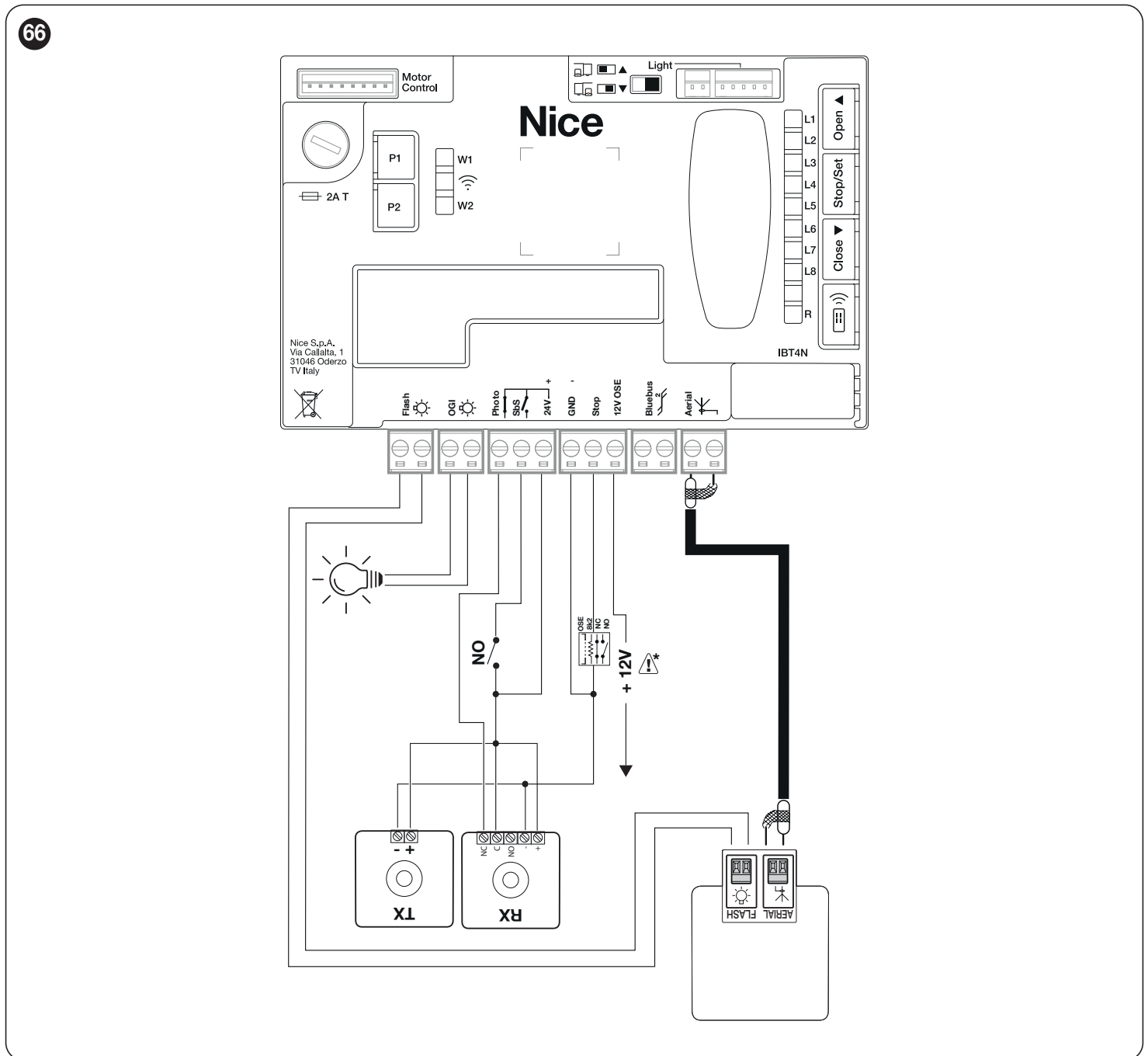
**Warning icon:** Warning: 12 V only to connect opto electronic safety-edge (OSE) (max 15 mA)

### 10.1.9 RELAY PHOTOCELLS WITHOUT PHOTOTEST FUNCTION

The control unit has the dedicated PHOTO input to which it is possible to connect the NC contact of the relay photocells. Unlike the configuration with "PHOTOTEST", after a command is given the manoeuvre is carried out without checking the validity of the signal coming from the photocells, without nonetheless altering the external photocells' reactivity to the status change. Connect the photocells as shown in "Figure 66".

#### Wiring diagram with relay photocells without PHOTOTEST

 All images of the accessories are included purely for illustration purposes.



 **Warning: 12 V only to connect opto electronic safety-edge (OSE) (max 15 mA)**



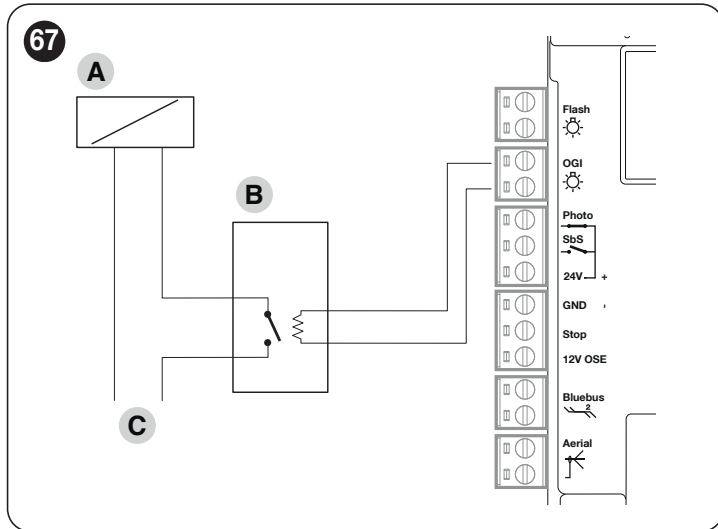
### 10.1.10 ELECTRIC LOCK

The OGI output is by default enabled for the OGI (Open Gate Indicator) function, but can be programmed for controlling an electric lock (refer to the **“Level 2 programming (adjustable parameters)”** paragraph on page 33).

At the start of the opening movement, the output is activated for 2 seconds, while during the closing manoeuvre it is not activated, therefore the electric lock must reset mechanically.

The output cannot control the electric lock directly, but only loads of 24 V  $\approx$  10W.

The output must be interfaced with a relay, as shown in the figure.



- A Electric lock
- B 24 V  $\approx$  support relay
- C Electric lock power supply

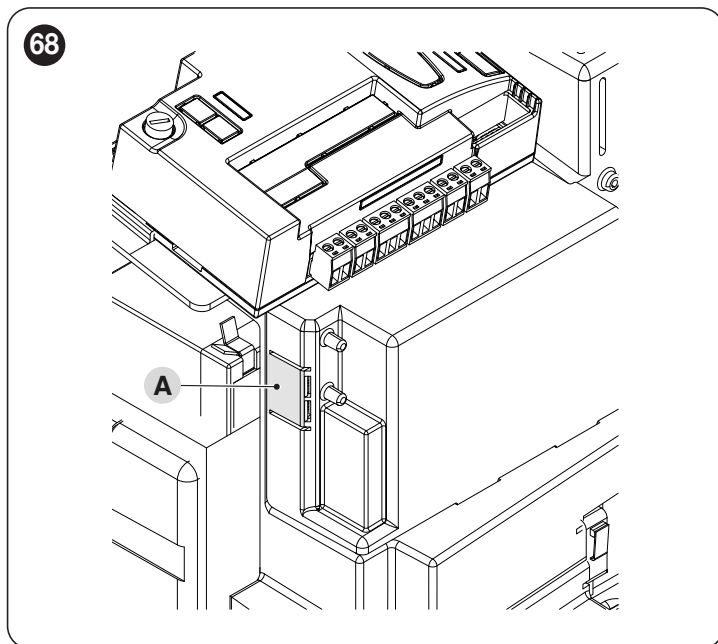
### 10.2 CONNECTING AND INSTALLING THE EMERGENCY POWER SUPPLY



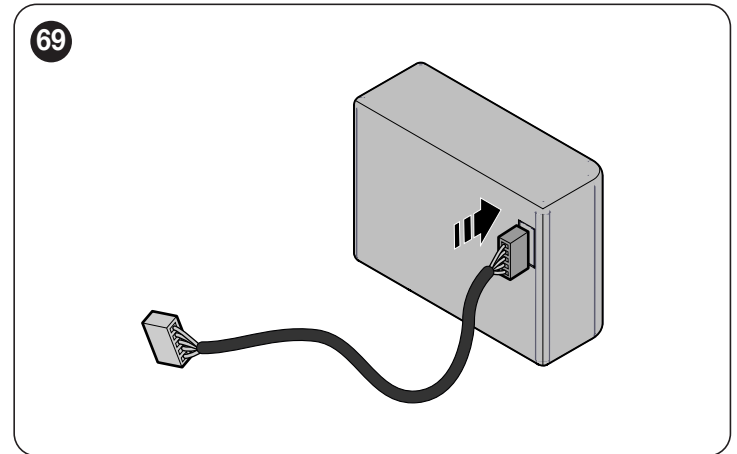
**The electrical connection of the battery to the control unit must be made only after completing all the installation and programming stages, as the battery is an emergency power supply.**

To install and connect the battery:

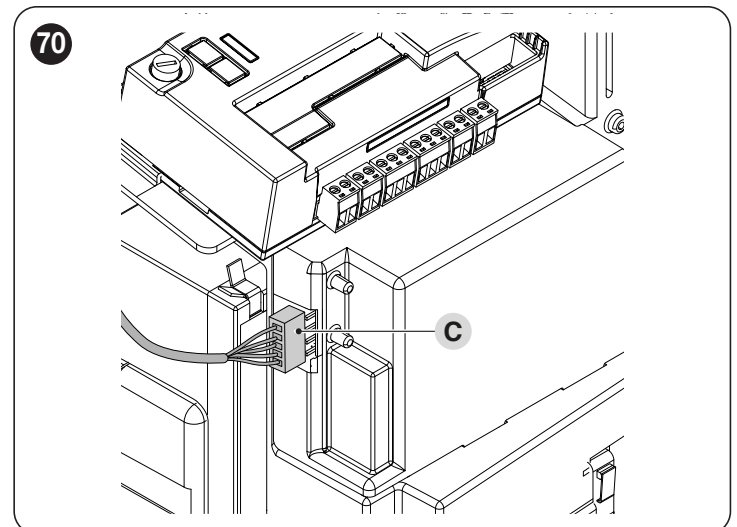
1. remove the pre-detachment element (A) (**“Figure 68”**)



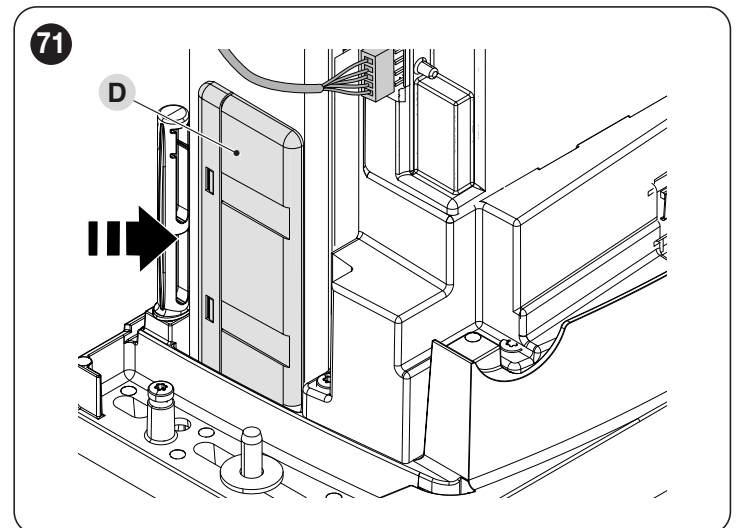
2. connect the appropriate cable to the connector of the back-up battery (PS124) (**“Figure 69”**)



3. insert the relative connector (C) on the connector emerging from the motor compartment (**“Figure 70”**)



4. insert the back-up battery (D) into its housing inside the motor body (**“Figure 71”**).

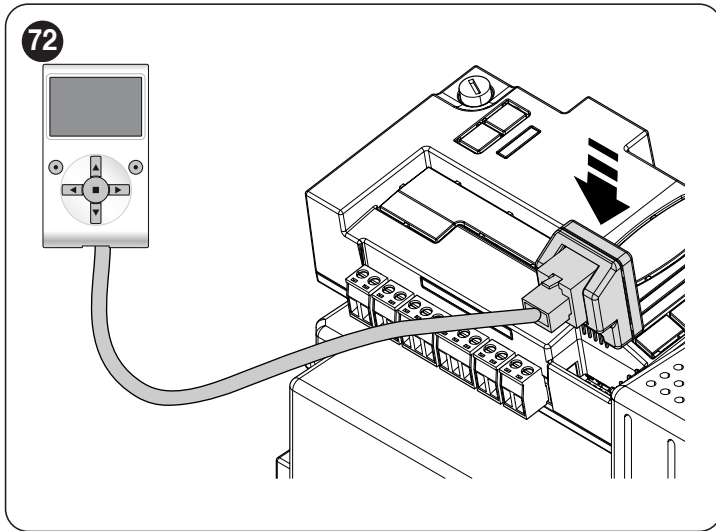


**Warning! In the back-up battery is used, the “All” stand-by function must not be used.**

### 10.3 CONNECTING THE OVIEW PROGRAMMER

The control unit has a BusT4 connector to which the "Oview" programmer can be connected, through the IBT4N interface. The programmer allows for fully and rapidly managing the installation, maintenance and diagnosis of the entire automation.

To access the connector, proceed as shown in the figure and connect the connector to its relevant slot.

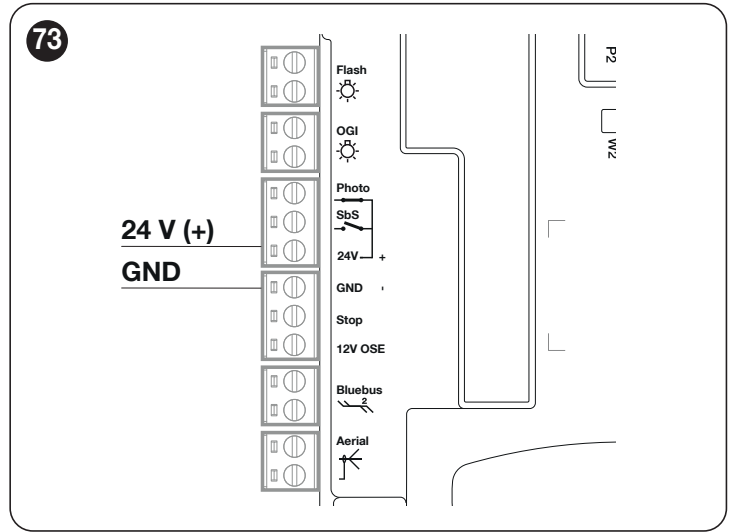


The Oview can be connected to multiple control units simultaneously (up to 16 without any particular precautions) and can be left connected to the control unit during the automation's normal operation. In this case, it can be used to send commands directly to the control unit using the specific "user" menu.

### 10.4 CONNECTING OTHER DEVICES

If the user needs to power external devices, such as a proximity reader for transponder cards or the light of the key selector switch, power can be tapped as shown in the figure.


The power supply voltage is **24V**  $\pm$  **-30% ÷ +50%** with a maximum available current of 100mA.



#### 10.4.1 EPMOB PHOTOCELLS AND ELMM COURTESY LIGHT

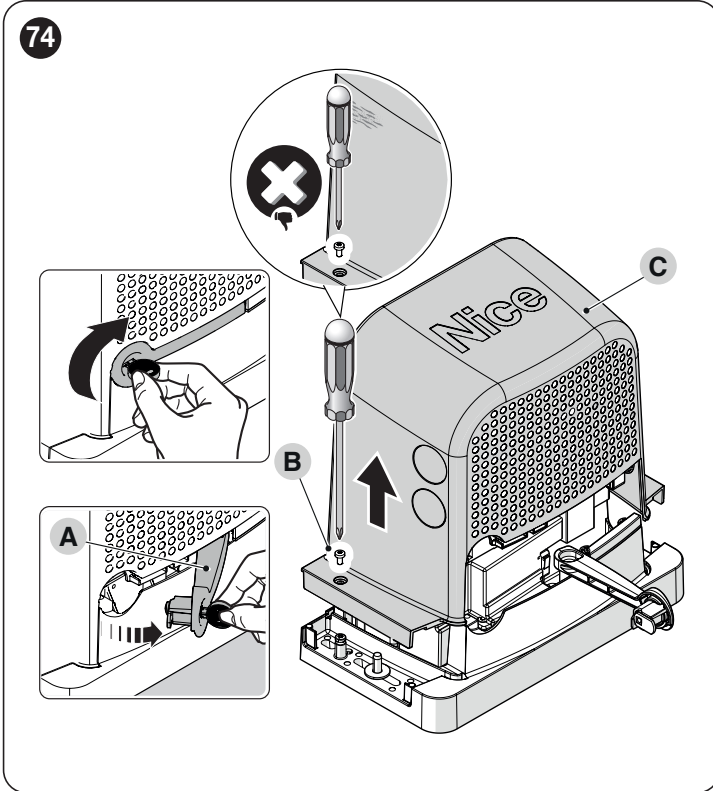
 ROBUS 600 HS is supplied without the mounting brackets for the accessories. Kit RBSKITSAFE1 includes the brackets and courtesy light ELMM.

 Alternatively to the EPMOB photocells it is possible to install the EPMOR reflex photocells.

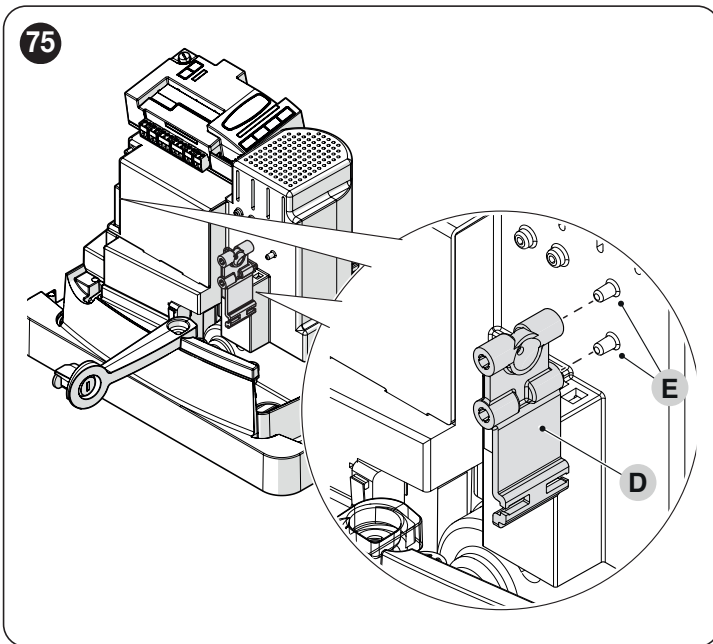
 Also refer to the manual of the accessories provided.


To mount the accessories:

1. open the locking hook (A) using the key provided
2. loosen the screws (B)
3. remove the cover (C) ("Figure 74")



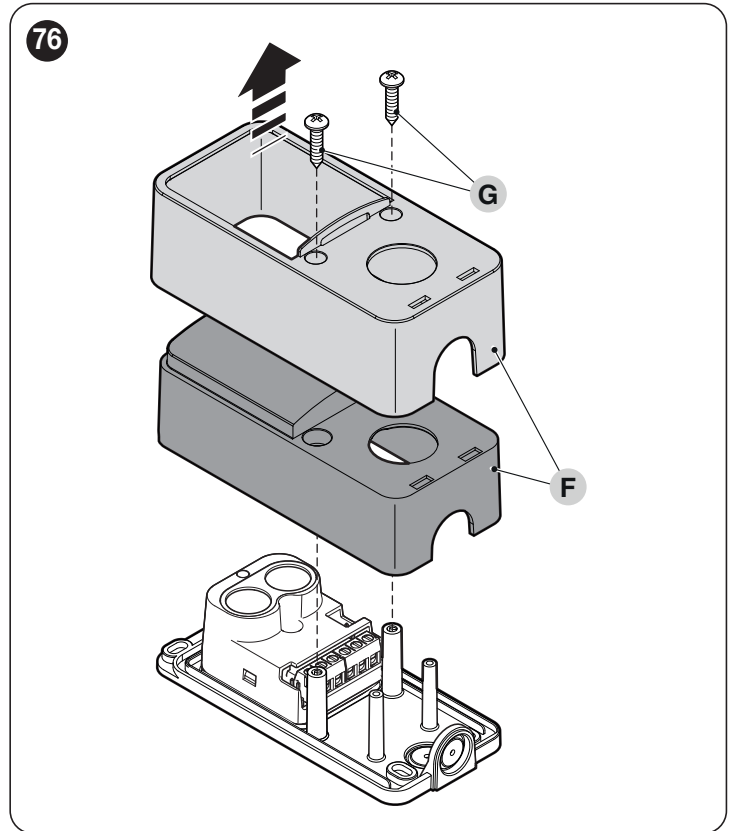
4. insert the bracket (D) into the pins (E) ("Figure 75")



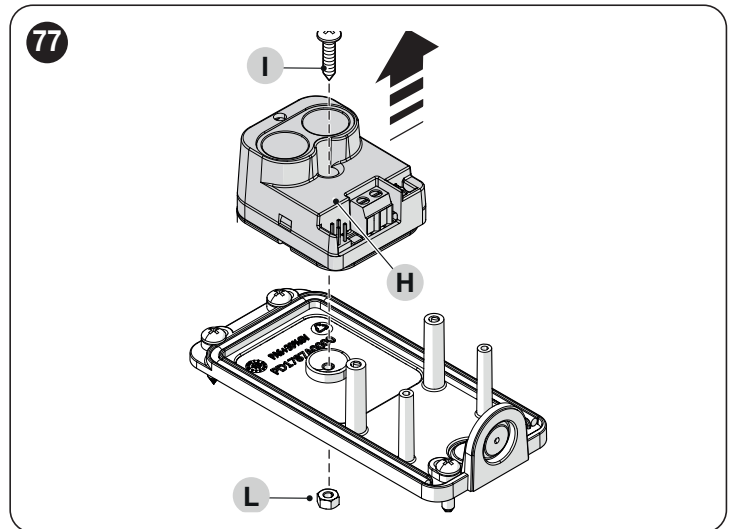
 The installation of the EPMOR photocell is illustrated below. For further information, also refer to the manual supplied with photocell itself.

 The procedure described also applies to the installation of the EPMOB photocell.

5. remove the covers (F) by loosening the screws (G) ("Figure 76")

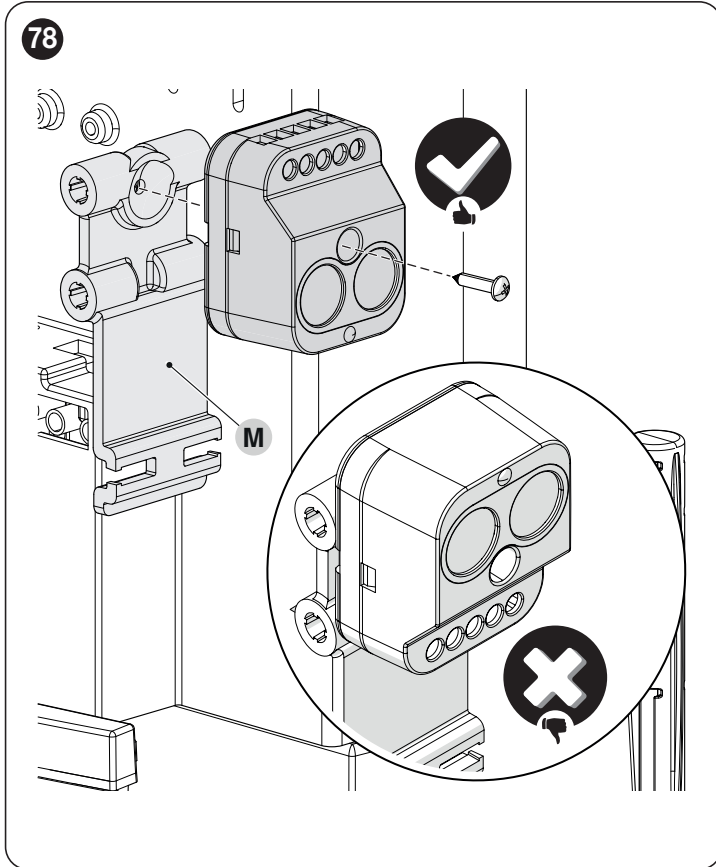


6. remove the photocell (H) by loosening the screw (I) and removing the nut (L) ("Figure 77")

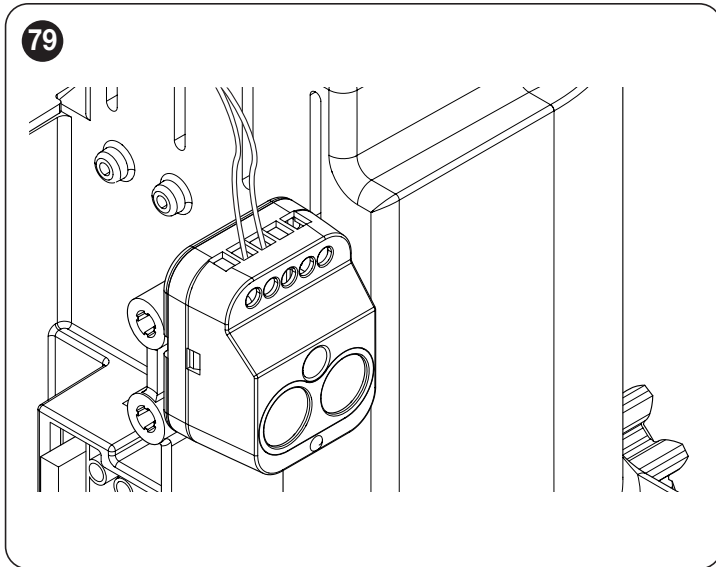


7. fasten the photocell to the bracket (M) using the same screw and nut removed previously ("Figure 78")

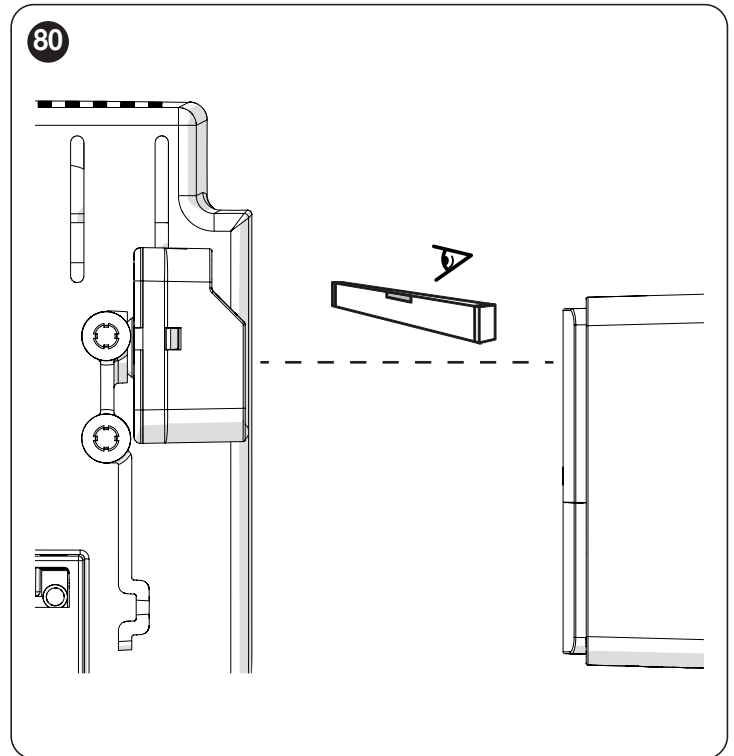
 **Warning!** Pay attention to the direction of installation of the photocell.



8. wire the device ("Figure 79")

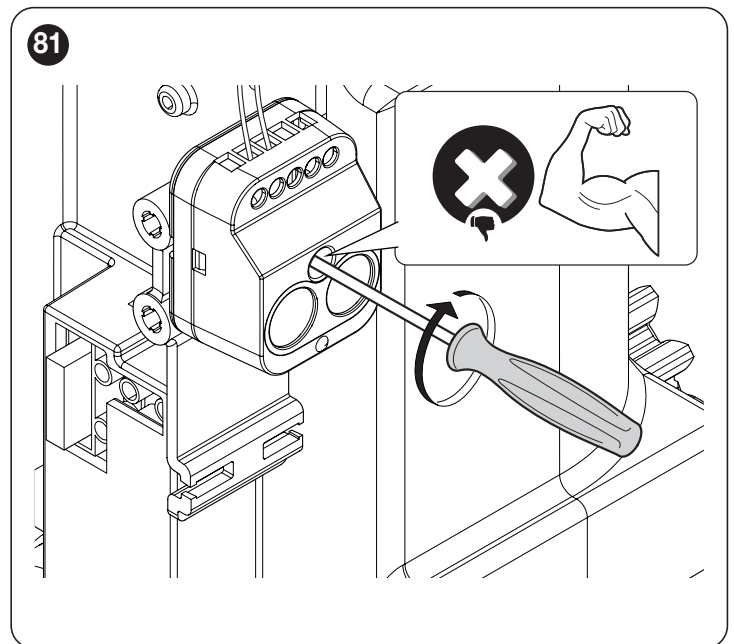


 **Warning!** Before proceeding with the final fastening, verify that the photocell is aligned with the reflecting unit (EPMOB) or (EPMOR).

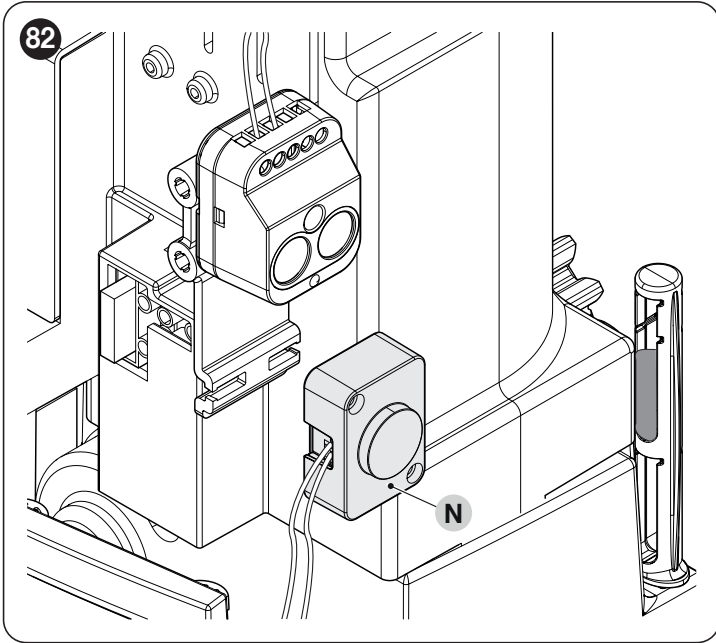


9. permanently fasten the photocell to the mounting bracket.

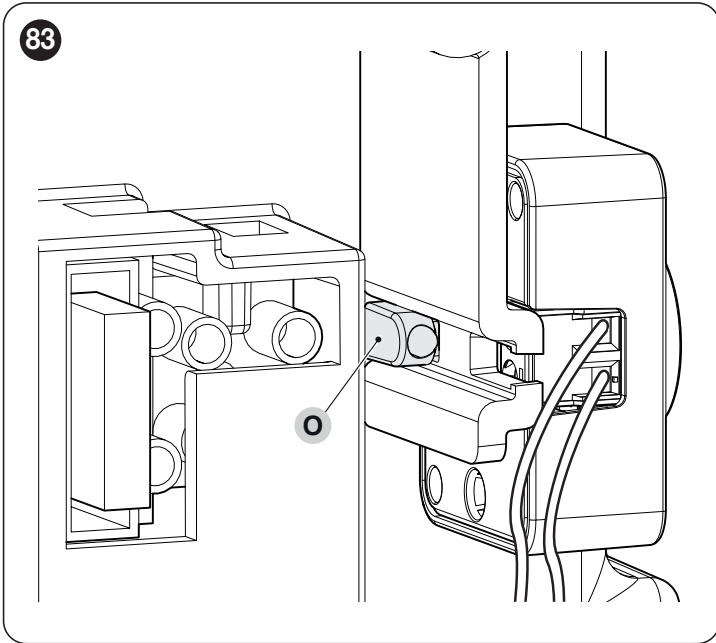
 **Do not apply excessive pressure while fastening the photocell to the bracket.**



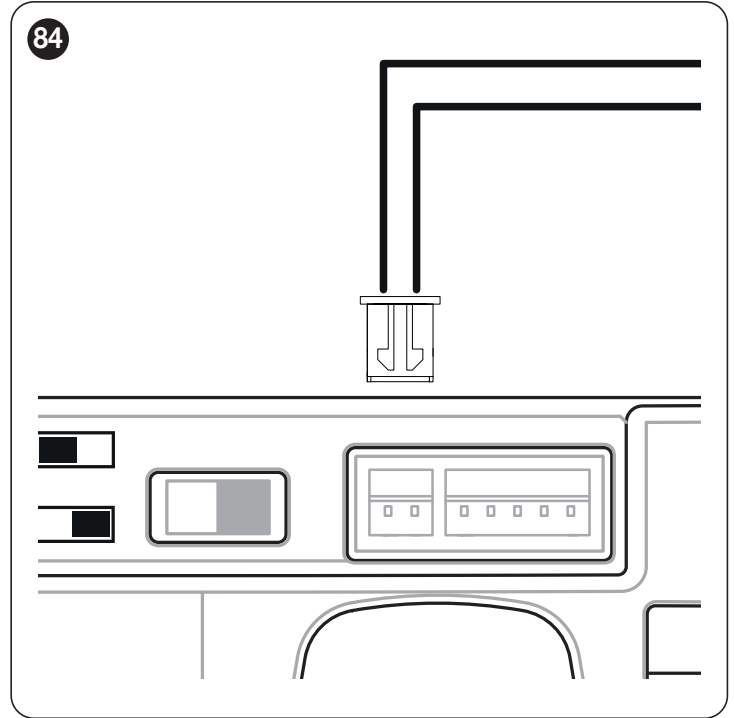
10. wire the courtesy light ELMM (N) ("Figure 82")



11. fasten the courtesy light using the clip (O) ("Figure 83")



12. connect the cables as indicated ("Figure 84")



1. position the cover
2. tighten the screws
3. close the locking hook and remove the key supplied.

# 11 TECHNICAL SPECIFICATIONS



All technical specifications stated in this section refer to an ambient temperature of 20°C (± 5°C). Nice S.p.A. reserves the right to apply modifications to the product at any time when deemed necessary, without altering its functions and intended use.

Table 33

GEARMOTOR TECHNICAL SPECIFICATIONS			
Description	RB400 RB400/V1 RB400/AU01	RB600 RB600/V1 RB600/AU01	RB600HS RB600HS/V1 RB600HS/AU01
<b>Product type</b>	Electro-mechanical gearmotor for the automatic movement of sliding gates for residential use, inclusive of electronic control unit		
<b>Pinion</b>	Z15m4	Z15m4	Z15m4
<b>Maximum frequency of operating cycles (at nominal torque)</b>	80 cycles per day (the control unit limits the cycles to the maximum specified in "Table 3").	100 cycles per day (the control unit limits the cycles to the maximum specified in "Table 3").	100 cycles per day (the control unit limits the cycles to the maximum specified in "Table 3").
<b>Maximum continuous operating time (at nominal torque)</b>	7 minutes (the control unit limits continuous operation to the maximum specified in "Table 3").	7 minutes (the control unit limits continuous operation to the maximum specified in "Table 3").	6 minutes (the control unit limits continuous operation to the maximum specified in "Table 3").
<b>Operating limits</b>	ROBUS is generally able to automate gates up to the weight or length limits specified in "Table 1".		
<b>Durability</b>	Estimated between 20,000 and 250,000 cycles, depending on the conditions shown in "Table 3".		
<b>Power supply (230V)</b>	230V~ (+10% -15%) 50/60Hz	230V~ (+10% -15%) 50/60Hz	230V~ (+10% -15%) 50/60Hz
<b>Version V1 (120V)</b>	120V~ 50/60Hz	120V~ 50/60Hz	120V~ 50/60Hz
<b>Version AU01 (250 V)</b>	250 V~ 50/60Hz	250V~ 50/60Hz	250 V~ 50/60Hz
<b>Maximum absorbed power at peak [corresponding to amperes]</b>	330W [2A] [3.9 A version /V1] [3.9A version /AU01]	500W [2,5A] [3.9 A version /V1] [3.9A version /AU01]	500W [2,5A] [3.9 A version /V1] [3.9A version /AU01]
<b>Insulation class</b>	1 (a safety earthing system is required)		
<b>Emergency power supply</b>	With PS124 optional accessory		
<b>Warning light output [Note 1]</b>	For 2 ELDC LED warning lights or maximum 2 x 12 V 21 W lamps		
<b>OGL output [Note 1]</b>	For one 24 V maximum 10 W lamp (the output voltage may vary between -30 and +50% and can also control small relays)		
<b>BLUEBUS output</b>	One output with maximum load of 15 BLUEBUS units		
<b>STOP input</b>	For normally closed or normally open contacts or for a 8.2 kΩ fixed resistor; in self-recognition mode (any variation from the memorised status triggers the "STOP" command)		
<b>Sbs input</b>	For normally open contacts (closing of the contact triggers the Step-by-Step command)		
<b>PHOTO input</b>	Input for relay photocells		
<b>CLOSE input</b>	Present on the expansion board (accessory). Refer to the "I/O expansion board (optional accessory)" paragraph.		
<b>AUX_IN input</b>	Present on the expansion board (accessory). Refer to the "I/O expansion board (optional accessory)" paragraph.		
<b>Radio connector</b>	SM connector for SMXI or OXI receivers		
<b>Radio ANTENNA input</b>	52 Ω for RG58 or similar type cable		
<b>Programmable functions</b>	8 ON-OFF and 8 adjustable functions. Refer to the "Level 1 programming (ON-OFF)" and "Level 2 programming (adjustable parameters)" paragraphs.		
<b>Self-learning functions</b>	Automatic recognition of devices connected to the BlueBus output Self-recognition of the type of "STOP" device (Normally Open, Normally Closed contact or 8.2 kΩ resistor) Self-learning of the gate length and calculation of the slowdown and partial opening points		

**Note 1** The output can be programmed with other functions (see "Table 19" on page 33 34) or through compatible interfaces.

Table 34

INCORPORATED RADIO RECEIVER TECHNICAL SPECIFICATIONS	
Description	Technical specification
Product type	Incorporated two-way receiver
Decoding	OXIBD: "BD" / "O-code"
Memorisable transmitters	Up to 100 if memorised in "Mode 1"
Input impedance	50 $\Omega$
Reception frequency	433.92 MHz
Transmission frequency	433.92 MHz (only BD)
Sensitivity	- 108 dBm
Radiated power (ERP)	< 10 mW (OXIBD)

Table 35

TECHNICAL CHARACTERISTICS OF THE INTEGRATED WI-FI MODULE (WHERE AVAILABLE)	
Description	Technical specification
Type of Wi-Fi interface with internal antenna	802.11b/g/n – 2.4GHz
Wi-Fi security	OPEN/WEP/WPA-PSK/WPA2-PSK
Bluetooth ®	v4.2 BR/EDR/BLE
Radiated power (EIRP)	P < 20 dBm

# EU Declaration of Conformity and declaration of incorporation of “partly completed machinery”

The EU declaration of conformity can be downloaded from the website [www.niceforyou.com](http://www.niceforyou.com)

<p><b>Nice</b> Type <b>RBS400</b>                  Made in Italy P/N:RBS400                  Nice SpA Via Callalta,1 31046 Oderzo TV Italy</p> <table border="1"> <tr> <td>250W</td> <td>230V 50/60Hz</td> </tr> <tr> <td>3.6Nm</td> <td>-20°C/+55°C</td> </tr> <tr> <td>IP44   10min</td> <td>30Cycles/h(@55°C)</td> </tr> </table> <p>S/N SERIALNUMBER YEAR</p> <p>CE 0682 UK EAC</p> <p>ES244500</p> <p>www.Niceforyou.com</p> <p>PROGRAMMING INSTR. MANUAL</p>	250W	230V 50/60Hz	3.6Nm	-20°C/+55°C	IP44   10min	30Cycles/h(@55°C)	<p><b>Nice</b> Type <b>RBS600</b>                  Made in Italy P/N:RBS600                  Nice SpA Via Callalta,1 31046 Oderzo TV Italy</p> <table border="1"> <tr> <td>450W</td> <td>230V 50/60Hz</td> </tr> <tr> <td>9Nm</td> <td>-20°C/+55°C</td> </tr> <tr> <td>IP44   7min</td> <td>30Cycles/h(@55°C)</td> </tr> </table> <p>S/N SERIALNUMBER YEAR</p> <p>CE 0682 UK EAC</p> <p>ES245300</p> <p>www.Niceforyou.com</p> <p>PROGRAMMING INSTR. MANUAL</p>	450W	230V 50/60Hz	9Nm	-20°C/+55°C	IP44   7min	30Cycles/h(@55°C)	<p><b>Nice</b> Type <b>RBS600HS</b>                  Made in Italy P/N:RBS600HS                  Nice SpA Via Callalta,1 31046 Oderzo TV Italy</p> <table border="1"> <tr> <td>450W</td> <td>230V 50/60Hz</td> </tr> <tr> <td>5.9Nm</td> <td>-20°C/+55°C</td> </tr> <tr> <td>IP44   7min</td> <td>30Cycles/h(@55°C)</td> </tr> </table> <p>S/N SERIALNUMBER YEAR</p> <p>CE 0682 UK EAC</p> <p>ES245400</p> <p>www.Niceforyou.com</p> <p>PROGRAMMING INSTR. MANUAL</p>	450W	230V 50/60Hz	5.9Nm	-20°C/+55°C	IP44   7min	30Cycles/h(@55°C)
250W	230V 50/60Hz																			
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450W	230V 50/60Hz																			
5.9Nm	-20°C/+55°C																			
IP44   7min	30Cycles/h(@55°C)																			



## 13 PRODUCT MAINTENANCE

The automation must be subjected to maintenance work on a regular basis in order to guarantee it lasts.



**Maintenance must be carried out strictly in compliance with the safety provisions provided in this manual and in accordance with the laws and regulations in force.**

To carry out maintenance on the gearmotor:

1. schedule maintenance interventions within maximum 6 months or after maximum 2.000 manoeuvres from the previous maintenance intervention
2. disconnect all power supplies, including any back-up batteries
3. check for any deterioration in the materials making up the automation, with special emphasis on erosion or oxidation of the structural parts; replace any parts that are not to standard
4. check the state of wear of moving parts: pinion, rack and all gate leaf components; replace any worn parts
5. connect the power supplies again and run all the tests and checks described in the "**Testing**" paragraph (page 24).

## 14 PRODUCT DISPOSAL



**This product is an integral part of the operator and must therefore be disposed of with it.**

As with the installation, only qualified personnel must dismantle the product at the end of its life.

This product is composed of different types of materials. Some of these materials can be recycled; others must be disposed of. Please enquire about the recycling or disposal systems in place in your local area for this type of product.

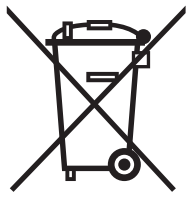


### WARNING

**Some parts of the product may contain polluting or dangerous substances. If not disposed of correctly, these substances may have a damaging effect on the environment and human health.**



**As indicated by the symbol shown here, this product must not be disposed of with household waste. Separate the waste for disposal and recycling, following the methods stipulated by local regulations, or return the product to the seller when purchasing a new product.**



### WARNING

**Local regulations may impose heavy penalties if this product is not disposed of in compliance with the law.**

Before using the automation system for the first time, ask the installer to explain the origin of residual risks and take a few minutes and read this instructions manual and related warnings handed to you by the installer. Keep the manual for consultation when in doubt and ensure supply to new owners of the automation.



## WARNING!

**Your automation is a machine that faithfully executes commands imparted by the user. Negligence and improper use may lead to dangerous situations:**

- do not manoeuvre the gate if there are people, animals or objects within its range of operation
- it is strictly forbidden to touch parts of the automation while it is moving
- the photocells should not be regarded as actual safety devices but only as auxiliary safety devices. They are designed using highly reliable technology, but in extreme conditions may be subject to malfunctions or potential faults, and in certain cases these faults might not be immediately evident
- periodically check that the photocells work properly.



**IT IS STRICTLY FORBIDDEN to transit while the automation is closing! Transit is allowed only if the automation is fully open and stationary.**



## CHILDREN

**An automation system guarantees a high degree of safety. With its detection systems, it can control and guarantee the gate's movement in the presence of people or objects. It is nonetheless advisable to forbid children from playing near the automation and not to leave remote controls near them to prevent any unwanted activation of the system. The automation is not a toy!**

**The product is not intended for use by persons, including children, with limited physical, sensory or mental capacities, or who lack experience or knowledge, unless supervised or trained in the use of the product by a person responsible for their safety.**

**Anomalies:** if the automation shows any signs of anomalous behaviour, disconnect the power supply to the system and manually unlock the motor (see instructions at the end of the chapter) to manoeuvre the automation manually. Do not attempt any repairs personally, but contact your trusted installer.



**Do not modify the system or the programming and adjustment parameters of the control unit: your installer is exclusively responsible for these operations.**

**Failure or lack of power supply:** while waiting for the installer to intervene or the electricity to be restored, if the system is not equipped with emergency power supplies, the automation can nonetheless be used by manually unlocking the motor (see the instructions at the end of the chapter) and moving the automation manually.

**Safety devices out of order:** the automation can also be used when one or more safety devices are defective or out of order. The automation can be controlled in "Hold-to-run" mode in the following way:

1. send a command to operate the automation using a transmitter or key selector, etc. If everything works normally, the automation will move regularly, otherwise the warning light will flash a few times and the manoeuvre will not start (the number of flashes depends on the reason for which the manoeuvre cannot start)
2. in this case, within 3 seconds press the control again and hold it down
3. after roughly 2 seconds, the automation will complete the requested manoeuvre in "Hold-to-run" mode, in other words, it will continue to move so long as the control is held down.



**If the safety devices are out of order, have the system repaired as soon as possible by a qualified technician.**

The test, periodic maintenance and any repairs must be documented by the person carrying out the work and the documents must be stored by the owner of the automation. The only interventions the user may carry out periodically include cleaning of the photocell glass components (use a soft and slightly damp cloth) and removing any leaves or stones that may obstruct the automation.



**Before carrying out any maintenance operations, the user of the automation must manually unlock the motor to prevent anyone from accidentally triggering the automation's movement (see the instructions at the end of the chapter).**

**Maintenance:** in order to ensure constant levels of safety and the longest useful life for the automation, routine maintenance must be carried out (at least every 6 months).



**Only qualified personnel is authorised to carry out checks, maintenance operations and repairs.**

**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 local regulations in force.

**Replacing the remote control battery:** if your remote control appears to be working poorly after some time, or stops working altogether, it may simply depend on flat batteries (depending on how much the device is used, the batteries may last from several months to over a year). You will notice this by the fact that the indicator light signalling the transmission fails to light up, is weak or lights up only for a short time. Before contacting the installer, try replacing the battery with that of another transmitter that works properly: if the anomaly is resolved, simply replace the flat battery with one of the same type.

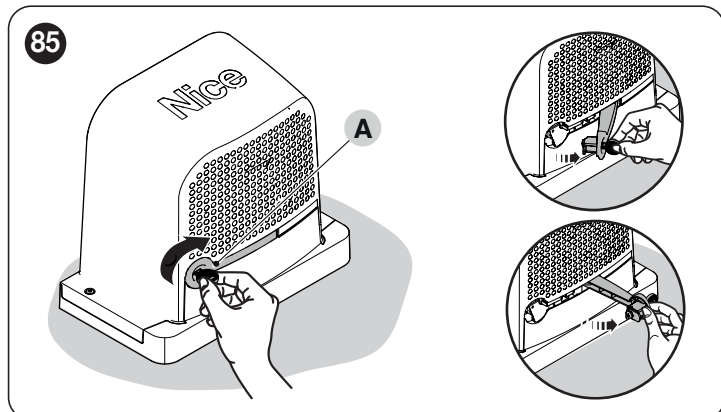
## Manually unlocking and locking the gearmotor

The gearmotor is equipped with a mechanical unlocking system that allows for opening and closing the gate manually.

These manual operations should only be performed in case of a power outage, malfunctions or during the installation phases.

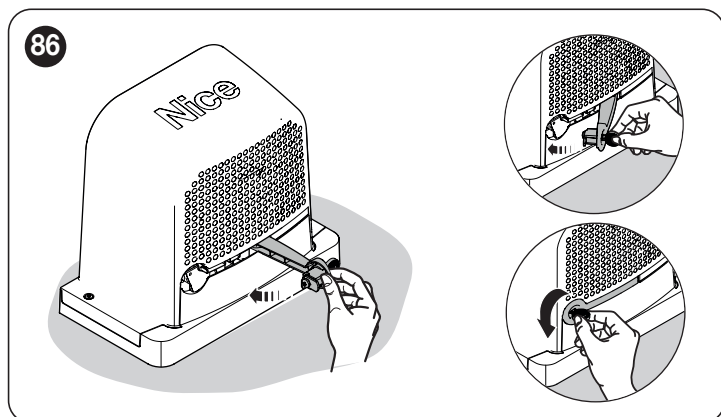
To unlock the device:

1. Open the locking hook (A) using the key provided ("Figure 85")



2. At this point, the automation can be moved manually to the desired position.

To lock the gate, close the locking hook, turn the key anti-clockwise and remove it.



# 15 PARAMETERS AND PROGRAMMABLE FUNCTIONS

The following pages list all the parameters and functions of the control unit with their relative reference values. With the exception of a few parameters that are read-only, almost all the available parameters can be modified through all the compatible Nice interfaces.



**WARNING: Nice reserves the right to modify the reference values and the functions without prior notice.**

## 15.1 KEY TO THE SYMBOLS

This key shows and describes all the symbols used in the following pages.

Ⓐ = Automatic procedure

☞ = Manual procedure

☒ = Multi-board parameter

✕ = Read-only parameter (non-modifiable parameter)

## 15.2 COMMON PARAMETERS

### Name

This parameter enables the user to assign the automation with a name other than the original, to facilitate identification (e.g. "northern gate"). It is possible to choose a name comprising maximum 24 characters, including spaces.

### Series (0 → 63, default = 0)

The series is a number that has to be assigned to each gearmotor, receiver or other device potentially connectable on a BusT4 network, to define its "classification area". Subsequently, when using automations in a complex system, all devices with the same series number can be controlled simultaneously.

### Address (1 → 127, default = 3)

The address is a number that has to be assigned to each gearmotor, receiver or other device potentially connectable on a BusT4 network, to distinguish it from other devices in a series. Therefore all devices within a series must have a different address from one another.

### Group (0 → 15, default = 0)

The function enables the user to assign a number to a device to be controlled (for example a gearmotor or other device potentially connectable to a BusT4 network), which enables this device to belong to a specific "command group".

Multiple devices, even belonging to different series, can be part of the same group. Up to 14 groups of devices can be created and, in particular, the same device may be inserted in 4 different groups.

- simultaneous control of different devices inserted in a group, even if some of these belong to different series;
- use of a single receiver, installed in one of the devices belonging to the group, to control all the devices belonging to this group.

### Firmware version ✕

This function can be used to view the firmware version present in a device.

### Hardware version ✕

This function can be used to view the hardware version present in a device.

### Serial number ✕

This function can be used to view the serial number identifying a specific device. This number is different for each device, even if of the same model.



#### BlueBus search

(0x0A)

This function can be used to start the learning procedure for devices connected to the BlueBus input and to the STOP input. It is also used to identify the direction of rotation of the motor (refer to the paragraph concerning the motor's rotation direction) and associate the connected expansion boards.

#### Position programming

This function can be used to measure the distance between the Closing limit switch and the Opening limit switch (length of the automation's leaf). This measurement is used by the control unit to precisely calculate the points (positions) in which the automation's leaf must start slowing down during a manoeuvre, and to determine the partial opening positions.

To activate the position search it is necessary to press the **"Start"** button.

– **Cruising speed** (30 → 100 (%), default = 40 (%))

Allows for defining the speed to be used during the position programming procedure.

– **Maximum opening**

Allows for viewing the opening limit switch position, after it has been learned.

– **Slowdown on opening**

Function expressed in metres. Used to programme the precise point (position) in which the automation must start slowing down before reaching the limit switch, at the end of the opening manoeuvre. After programming the desired position, it must be saved using the **"OK"** button.

– **Slowdown on closing**

Function expressed in metres. Used to programme the precise point (position) in which the automation must start slowing down before reaching the limit switch, at the end of the closing manoeuvre. After programming the desired position, it must be saved using the **"OK"** button.

– **Partial opening 1**

Function expressed in metres. Used to programme the exact point (position) in which the automation stops moving following a "Partial opening 1" command, during an opening manoeuvre. After programming the desired position, it must be saved using the **"OK"** button.

– **Partial opening 2**

Function expressed in metres. Used to programme the exact point (position) in which the automation stops moving following a "Partial opening 2" command, during an opening manoeuvre. After programming the desired position, it must be saved using the **"OK"** button.

– **Partial opening 3**

Function expressed in metres. Used to programme the exact point (position) in which the automation stops moving following a "Partial opening 3" command, during an opening manoeuvre. After programming the desired position, it must be saved using the **"OK"** button.



**The deletion procedures described below cannot be cancelled.**

This function enables the user to delete the configuration of the control unit and the data saved in it, by choosing among the following options:

– **No deletion**

No deletion takes place;

– **BlueBus devices**

Deletes the configuration of BlueBus devices, of the STOP input and of the previously acquired expansion boards;

– **Positions**

Deletes all the memorised positions;

– **Function values**

Deletes all values and adjustments of the functions pertaining to the control unit, resetting the factory values;

– **Delete all**

Deletes all data in the control unit memory (restoring them to the factory settings), except for the reserved parameters: series, address, hardware version, software version, serial number.

## 15.4 BASIC PARAMETERS

### Automatic closing (ON → OFF, default = OFF)

(0x80)

This function can be used to activate automatic closing in the control unit at the end of a complete opening manoeuvre.

**Function ON** = the automatic closing manoeuvre starts at the end of the stand-by time programmed in the “pause time” function.

**Function OFF** = the Control unit is in “semi-automatic” operating mode.

### Pause time (0 → 240(s), default = 30s)

(0x81)

This parameter defines the desired stand-by time that must elapse between the end of an opening manoeuvre and the start of a closing manoeuvre.



**WARNING = This function is only used if the “automatic closing” function is ON.**

### Close again after photo

(0x86)

– **Active** (ON → OFF, default = OFF)

The function allows for keeping the automation in the open position strictly for the time required for a vehicle or people to transit. When this interval elapses the closing manoeuvre activates automatically, starting after the time set in the “stand-by time” function. (The function uses the photocells to identify the transit of people/vehicles and trigger the closing manoeuvres).

**Function ON** = activates the “Close again after photo” function.

**Function OFF** = the function is deactivated.



**WARNING = The “close again after photo” function is disabled automatically if, during the manoeuvre in progress, a Stop command is sent to stop the manoeuvre.**

– (OPEN FULLY → OPEN UNTIL DISENGAGEMENT, default = OPEN UNTIL DISENGAGEMENT) **mode**

This parameter is factory-set to the “open until disengagement” mode. The function has 2 operating modes:

- **open fully** = if the safety devices (photocells) intervene during a closing manoeuvre, the automation starts to perform a complete opening manoeuvre. After the “stand-by time”, the automation will autonomously start the closing manoeuvre.

- **open until disengagement** = if the safety devices (photocells) intervene during a closing manoeuvre, the automation starts to perform an opening manoeuvre, which continues until the photocells are disengaged. At this point, the manoeuvre is shut down and the automation starts the closing manoeuvre after the stand-by time programmed in the “stand-by time” function has elapsed. Note – If the “Automatic closing” function is not active, the control unit switches to the “open fully” mode.

- **Stand-by time** (0 → 250(s), default = 5s)

This function can be used to programme in the control unit the desired stand-by time that must elapse between the end of an opening manoeuvre (or the clearing of the photocells) and the start of a closing manoeuvre.

## Always close

(0x87)

- **Active** (ON → OFF, default = OFF)

This function enables the automation to autonomously run a closing manoeuvre after a blackout. The function only activates after a blackout.

**Function ON** = when the power is restored the closing manoeuvre is carried out.

**Function OFF** = when the power is restored, the automation remains stationary.



**WARNING: for safety-related reasons, when the function is active, the closing manoeuvre is preceded by a pre-flash, the duration of which is programmed through the “stand-by time” function (see below).**

- (ALWAYS CLOSE → SAVE AUTOMATIC CLOSING, default = ALWAYS CLOSE) **mode**

The function has 2 operating modes:

- **always close** = after a blackout, when the power is restored and the time indicated in the “stand-by time” parameter has elapsed, the automation runs an automatic closing manoeuvre
- **save closing** = by activating this mode, when power is restored after a blackout, two results can be obtained:
  - execution of the automatic closing manoeuvre according to the time set in the “pre-flashing time” function, if the countdown of this time was in progress when the blackout occurred;
  - execution of the closing manoeuvre if an automatic closing manoeuvre was under way at the time of the blackout and had not been completed.

Note – If the automatic closing manoeuvre was cancelled before the blackout (for example, by sending the Stop command), the closing manoeuvre will not be performed when the power is restored.

- **Stand-by time** (0 → 20(s), default = 5s)

This parameter can be used to programme in the control unit the desired stand-by time that must elapse between the restart due to a blackout and the start of a closing manoeuvre. This parameter is only managed if the “ACTIVE” mode is set to ON.

## Force management

(0x47)

- **Opening force** (10 → 100 (%), default = 70%)

The function can be used to adjust the force applicable by the motor during an opening manoeuvre.

- **Opening slowdown force** (10 → 100 (%), default = 70%)


The function can be used to adjust the force applicable by the motor during the slowdown phase of an opening manoeuvre.

- **Closing force** (10 → 100 (%), default = 70%)

The function can be used to adjust the force applicable by the motor during a closing manoeuvre

- **Closing slowdown force** (10 → 100 (%), default = 70%)

The function can be used to adjust the force applicable by the motor during the slowdown phase of a closing manoeuvre

- **Force intervention time** (0 → 500ms, default various, 4 x )

The function can be used to adjust the maximum intervention time during the various phases of the manoeuvre's execution.

[Board 1] - Maximum intervention time during the opening manoeuvre (0 → 500 ms)

[Board 2] - Maximum intervention time during the slowdown phase of an opening manoeuvre (0 → 500 ms)

[Board 3] - Maximum intervention time during the closing manoeuvre (0 → 500 ms)

[Board 4] - Maximum intervention time during the slowdown phase of a closing manoeuvre (0 → 500 ms).

- **Open speed** (25 → 100 (%), default = 60%)

The function can be used to programme the motor speed during an opening manoeuvre.

- **Opening slowdown speed** (22 → 100 (%), default = 22%)

The function can be used to programme the motor speed during the slowdown phase of an opening manoeuvre.

- **Close speed** (25 → 100 (%), default = 60%)

The function can be used to programme the motor speed during a closing manoeuvre.

- **Closing slowdown speed** (22 → 100 (%), default = 22%)

The function can be used to programme the motor speed during the slowdown phase of a closing manoeuvre.

## Surge

(0x8F)

- **Active** (ON → OFF, default = OFF)

This function is useful in the presence of high static friction (for example, snow or ice obstructing the automation) as it allows for momentarily increasing (see surge time) the speed and force used in the initial phase of a manoeuvre

**Function ON** = the values assigned to the functions associated with motor force and speed are (momentarily) increased to give the motor more power during the initial phase of a manoeuvre

**Function OFF** = normal operation

- **Surge time** (0 → 10 (s), default = 0s)

This function can be used to programme the duration of the motor's initial surge



**WARNING! The function is only effective if the “surge” function is set to ON.**



– **Active** (ON → OFF, default = OFF)

This function can be used to generate a pre-flash before the start of each manoeuvre to signal in advance a danger situation. The pre-flashing times can be configured for each manoeuvre direction

**Function ON** = activate the pre-flashing time between activation of the warning light and the start of an opening or closing manoeuvre

**Function OFF** = the warning light starts flashing when the manoeuvre starts

– **Opening time** (1 → 10 (s), default = 3s)

This function can be used to programme the flashing time that signals the imminent start of an opening manoeuvre; it is associated with the “pre-flashing” function.

– **Closing time** (1 → 10 (s), default = 3s)

This function can be used to programme the flashing time that signals the imminent start of the closing manoeuvre; it is associated with the “pre-flashing” function.

## Stand-by

## (0x8B)

– **Active** (ON → OFF, default = OFF)

This function can be used to reduce electrical consumption to the maximum as, after the “stand-by time” at the end of each manoeuvre, the outputs, internal peripherals and status LEDs will be switched off.

**Function ON** = Activates the stand-by function according to the profile chosen on “Mode”. This function is particularly useful in case of battery-powered operation

**Function OFF** = normal operation of the automation

– **Mode** (safety devices → BlueBus → all, all except Wi-Fi, default = safety devices)

The stand-by function has 4 operating modes:

- **safety devices** – The control unit switches off the BlueBus photocell transmitters and all LEDs, except for the BlueBus LED, which will flash more slowly instead.
- **BlueBus** – The control unit switches off the BlueBus output (the devices) and all LEDs, except for the BlueBus LED, which will flash more slowly instead.
- **all** – The control unit switches off: the BlueBus output (the devices), the control unit outputs (and the outputs of any expansion modules), the 12 V services voltage, the Wi-Fi module (where present) and all the LEDs, except for the BlueBus LED which will flash more slowly instead.
- **all except Wi-Fi** – The control unit switches off: the BlueBus output (the devices), the control unit outputs (and the outputs of any expansion modules), the 12 V services voltage, and all the LEDs, except for the BlueBus LED which will instead flash more slowly. **In this mode, the integrated Wi-Fi module is not switched off!**



**WARNING! When the control unit receives any movement command, it restores normal operation. At the end of the manoeuvre, if the function is ON, the control unit will reactivate the Stand-by mode.**

– **Stand-by time** (5 → 250 (s), default = 60s)

This function can be used to programme the time between the end of a manoeuvre and the start of the “stand-by” function.

– **MASTER SLAVE mode**

The function **all** and **all excluding Wi-Fi** on the slave is inhibited despite LED “L4” indicating that this mode is active (see “**Wiring diagram**” paragraph or table “**Table 18**”)

## Automation lock (ON → OFF, default = OFF)

## (0x9A)

This function can be used to inhibit the automation’s movements.

**Function ON** = no type of sent command will be performed, with the exception of “High-priority step-by-step”, “Unlock”, “Unlock and close” and “Unlock and open” commands.

**Function OFF** = normal operation

**Button lock (ON → OFF, default = OFF)****(0x9C)**

This function disables operation of the buttons present on the control unit. This function is particularly useful if children are present

**Function ON** = the control unit inhibits any command sent from the control unit buttons

**Function OFF** = normal operation



**Warning! The Radio button remains active**

**Internal radio inhibition (ON → OFF, default = OFF)****(0x9B)**

This function can be used to inhibit the operation of the internal radio. This function is particularly useful when using an external receiver with SM connector (optional accessories) belonging to the OXI, OXIBD, etc. families.

**Function ON** = disables the operation of the internal receiver

**Function OFF** = normal operation (integrated radio enabled)

**Brief reversal value (0,5 → 5 (s), default = 3 (s))****(0x31)**

This function can be used to programme the duration of the brief reversal time that the control unit commands as a safety manoeuvre after an obstacle is detected or a "Stop" command is sent.

**Maximum Work Time (10 → 250 (s), default = 120 (s))****(0xA7)**

This function can be used to define the maximum duration allotted to each manoeuvre. Once this time has elapsed, the control unit performs a STOP automatically by stopping the current manoeuvre. This function is particularly useful for safeguarding the integrity of the electrical motor.

**Electric lock time (0,1 → 10 (s), default = 2 (s))****(0x5A)**

This parameter can be used to programme in the control unit the desired time that must elapse between the end of a closing manoeuvre and the start of an opening manoeuvre.

**Suction cup time (0,1 → 10 (s), default = 2 (s))****(0x5C)**

This parameter can be used to programme in the control unit the desired time that must elapse between the end of a closing manoeuvre and the start of an opening manoeuvre, when the suction cup is detached.

**Courtesy light time (0 → 240 (s), default = 60 (s))****(0x5B)**

This parameter can be used to programme the desired duration for which the courtesy light remains lit at the end of each manoeuvre or following a "Courtesy light timer" command

**Functions that can be programmed using the Oview programmer****Slave mode:**

This parameter is an ON / OFF type parameter; the factory setting is "OFF". If there are two gearmotors that must operate in a synchronised manner, each installed on one of the two leaves of a gate or door, one must function as the primary (Master) gearmotor and the other as the secondary (Slave) gearmotor. To configure the system in this way, set the Master motor to "OFF" and the Slave motor to "ON".

## 16 AVAILABLE COMMANDS

The following tables list all the commands available that can be interpreted by the control unit.

These commands are divided into **BASIC** and **EXTENDED** commands and can be used from any source (radio remote control, wired inputs on terminal block, compatible Nice interfaces, etc.)

### 16.1 BASIC COMMANDS

Commands used in a typical installation

Table 36

DESCRIPTION OF BASIC COMMANDS	
Command configuration	Description
<b>Open</b>	It is the basic command for executing an opening movement.
<b>Close</b>	It is the basic command for executing a closing movement.
<b>Stop</b>	It is the basic command for interrupting the automation's movement.
<b>Partial open 1</b>	The control unit causes the application to run the opening manoeuvre until the position is reached as set in the "partial opening 1" function.
<b>Step-by-Step</b>	The control unit causes the application to run the manoeuvre following that previously executed (or still in progress), according to the order of manoeuvres given in the command's programmed sequence.

### 16.2 EXTENDED COMMANDS

Commands used in case of more complex needs (condominiums, companies, etc.)

Table 37

DESCRIPTION OF EXTENDED COMMANDS	
Command configuration	Description
<b>High-priority step-by-step</b>	The control unit causes the application to run the manoeuvre following that previously executed (or still in progress), with respect to the order of manoeuvres given in the programmed sequence. Important = This command is executed even if the control unit is set with the "lock" command.
<b>Condominium (condominium Step-by-Step)</b>	The control unit causes the application to run the "close - stop - open - open" sequence, until the maximum opening position is reached. The closing command can only be given once the maximum opening position has been reached.
<b>Partial open 2</b>	The control unit causes the application to complete the opening manoeuvre until the position is reached as set in the "partial opening 2" function.
<b>Partial open 3</b>	The control unit causes the application to complete the opening manoeuvre until the position is reached as set in the "partial opening 3" function.
<b>Lock</b>	The control unit locks and does not execute any type of command, with the exception of the "High-priority step-by-step", "Unlock", "Unlock and close" and "Unlock and open" commands.
<b>Open and lock</b>	The control unit causes the application to run the opening manoeuvre until the programmed "opening" position is reached and then locks the automation.
<b>Close and lock</b>	The control unit causes the application to run the closing manoeuvre until the programmed "closing" position is reached and then locks the automation.
<b>Release</b>	The control unit unlocks and restores the normal operating status (all sent commands can be executed).
<b>Unlock and Open</b>	Unlocks the automation and triggers an opening manoeuvre.
<b>Unlock and Close</b>	Unlocks the automation and triggers a closing manoeuvre.
<b>Courtesy light ON/OFF</b>	This command can be used to invert the on and off statuses of the courtesy light on the control unit. The courtesy light can remain lit for maximum 240 seconds (4 minutes), after which it will switch off automatically.
<b>Timer courtesy light</b>	This command can be used to activate the courtesy light on the control unit on a timer-controlled basis. The switch-on time can be personalised up to maximum 240 seconds (4 minutes).
<b>Automatic opening active</b>	This command can be used to activate the function of the BlueBus control photocells and of the inputs configured in "Condominium open" mode. For example: when the control photocells are engaged, the control unit triggers the automation to execute an opening manoeuvre.
<b>Deactivate automatic opening</b>	This command enables deactivation of the "automatic opening active" mode described above.

## 17.1 STANDARD CONFIGURATION

This section groups the available configurations that can be associated with the inputs present on the control unit (including any expansion boards).



**Important!** To ensure correct operation of the control unit, the inputs must be associated with the desired command and then with the desired operating mode.



**WARNING!** The command's behaviour is managed according to the modes specified in the "operating mode" list. The default configuration is written in bold letters.

Table 38

OPERATING MODES OF THE COMMANDS		
COMMAND	DESCRIPTION	OPERATING MODE (default mode in bold)
No command	Does not execute any command (is useful for inhibiting the interaction of an input on the terminal block)	Not applicable
<b>Step-by-step</b> (Input managed as NO)	The control unit causes the application to run the manoeuvre following that previously executed (or still in progress)	Open - Stop - Close - Stop <b>Open - Stop - Close - Open</b> Open - Close - Open - Close Condominium Step-by-Step 1 Condominium Step-by-Step 2 Step-by-step 2 Hold-to-run "Industrial" mode
<b>Partial open 1</b> (Input managed as NO)	The control unit causes the application to run an opening manoeuvre until the programmed "partial opening 1" position is reached	Open - Stop - Close - Stop <b>Open - Stop - Close - Open</b> Open - Close - Open - Close Condominium Step-by-Step 1 Condominium Step-by-Step 2 Hold-to-run "Industrial" mode
<b>Open</b> (Input managed as NO)	The control unit causes the application to run the opening manoeuvre until the programmed "opening" position is reached	<b>Open - Stop - Open</b> Condominium open 1 Condominium open 2 Open 2 Hold-to-run open
<b>Close</b> (Input managed as NO)	The control unit causes the application to run the closing manoeuvre until the programmed "closing" position is reached	<b>Close - Stop - Close</b> Condominium close 1 Condominium close 2 Hold-to-run close
<b>Stop</b> (Input managed as NO)	The control unit causes the current manoeuvre to stop and executes the action programmed on "available configurations"	Stop and brief reversal <b>Stop</b>
<b>Photo</b> (Input managed as NC)	The control unit manages the input as a safety device	<b>Stop and reversal (full)</b> Stop and brief reversal Stop Temporary stop
<b>Photo1</b> (Input managed as NC)	The control unit manages the input as a safety device	<b>Stop and reversal (full)</b> Stop and brief reversal Stop Temporary stop
<b>Photo2</b> (Input managed as NC)	The control unit manages the input as a safety device	<b>Stop and reversal (full)</b> Stop and brief reversal Stop Temporary stop
<b>Photo3</b> (Input managed as NC)	The control unit manages the input as a safety device	Stop and reversal (full) Stop and brief reversal Stop <b>Temporary stop</b>
<b>Stop on opening</b>	The control unit triggers the execution of the associated command when the input (configured as STOP) changes status during an opening manoeuvre	Stop <b>Stop and brief reversal</b> Stop and reversal
<b>Stop on closing</b>	The control unit triggers the execution of the associated command when the input (configured as STOP) changes status during a closing manoeuvre	Stop <b>Stop and brief reversal</b> Stop and reversal
<b>Opening on Emergency</b>	The control unit forces the opening command only when the main power supply source fails.  Warning = The function only activates if there is a secondary power supply (example: battery pack).	<b>Condominium open</b>

OPERATING MODES OF THE COMMANDS		
COMMAND	DESCRIPTION	OPERATING MODE (default mode in bold)
<b>Closing on Emergency</b>	The control unit forces the closing command only when the main power supply source fails.  Warning = The function only activates if there is a secondary power supply (example: battery pack).	<b>Condominium close</b>
<b>Detect obstacle on opening</b>	The control unit triggers the execution of the associated command when an obstacle is detected during an opening manoeuvre.	Stop Stop and brief reversal <b>Stop and reversal</b>
<b>Detect obstacle on closing</b>	The control unit triggers the execution of the associated command when an obstacle is detected during a closing manoeuvre.	Stop Stop and brief reversal <b>Stop and reversal</b>

## 17.2 CONFIGURATION OF THE SAFETY FUNCTIONS

The parameters listed below cannot be associated with any physical input but are used by the automation for all those functions strictly related to safety. In particular, it is possible to define which command the control unit must execute **during a manoeuvre** in the event that the **STOP** input intervenes (and all inputs configured as STOP) or if an **obstacle is detected**.

The following commands are available and configurable in the commands section.

Table 39

OPERATING MODES OF THE COMMANDS		
FUNCTION	DESCRIPTION	OPERATING MODE (default mode in bold)
<b>Stop on opening</b>	The control unit triggers the execution of the associated command when the input (configured as STOP) changes status during an opening manoeuvre.	Not specified <b>Stop</b> Stop and brief reversal Stop and reversal
<b>Stop on closing</b>	The control unit triggers the execution of the associated command when the input (configured as STOP) changes status during a closing manoeuvre.	Not specified Stop <b>Stop and brief reversal</b> Stop and reversal
<b>Detect obstacle on opening</b>	The control unit triggers the execution of the associated command when an obstacle is detected during an opening manoeuvre.	Not specified Stop Stop and brief reversal <b>Stop and reversal</b>
<b>Detect obstacle on closing</b>	The control unit triggers the execution of the associated command when an obstacle is detected during a closing manoeuvre.	Not specified Stop Stop and brief reversal <b>Stop and reversal</b>

## 17.3 CONTROL MODE DESCRIPTION

The underlying list describes the various operating modes of the available controls present on the control unit.

Table 40

CONTROL CONFIGURATION	
OPERATING MODE	DESCRIPTION
<b>“Industrial” mode</b>	The following sequence is executed: - “semi-automatic opening” - “hold-to-run close”.
<b>Hold-to-run</b>	The opening or closing manoeuvre is executed exclusively if the command is persistent (hold-to-run). When the control is released, the control unit executes a STOP command.
<b>Close - Stop - Close</b>	The described sequence is executed.
<b>Condominium close 1</b>	The “close - close” sequence is executed. If the command is sent several times, it is not taken into account until the maximum closing position is reached.
<b>Condominium close 2</b>	The “close - close” sequence is executed. If the command is sent several times, it is not taken into account until the maximum closing position is reached.  Warning = if the command persists for more than 2 seconds, the control unit executes a “Stop” command.
<b>Hold-to-run close</b>	The closing manoeuvre is executed exclusively if the command is persistent (hold-to-run). When the control is released, the control unit executes a STOP command.
<b>Open - Stop - Close - Stop</b>	The described sequence is executed.
<b>Open - Stop - Close - Open</b>	The described sequence is executed.
<b>Open - Close - Open - Close</b>	The described sequence is executed.
<b>Open - Stop - Open</b>	The described sequence is executed.

OPERATING MODE	DESCRIPTION
<b>Condominium open 1</b>	The described "open - open" sequence is executed. If the command is sent several times, it is not taken into account until the maximum opening position is reached.
<b>Condominium open 2</b>	The described "open - open" sequence is executed. If the command is sent several times, it is not taken into account until the maximum opening position is reached.  Warning = if the command persists for more than 2 seconds, the control unit executes a "Stop" command.
<b>Open 2</b>	The opening sequence is executed.  WARNING = If the command persists for more than 2 seconds, the control unit executes a "partial opening 1" command.
<b>Hold-to-run open</b>	The opening manoeuvre is executed exclusively if the command is persistent (hold-to-run). When the control is released, the control unit executes a STOP command.
<b>Condominium Step-by-Step</b>	The "close - stop - open - open" sequence is executed until the maximum opening position is reached. If another command is sent after this one, the application executes the closing manoeuvre with the same sequence.
<b>Condominium Step-by-Step 2</b>	The "close - stop - open - open" sequence is executed until the maximum opening position is reached. If another command is sent after this one, the application executes the closing manoeuvre with the same sequence.  WARNING = If the command persists for more than 2 seconds, the control unit executes a "Stop" command
<b>Step-by-step 2</b>	This executes the sequence "open - stop - close - open".  WARNING = If the command persists for more than 2 seconds, the control unit executes a "partial opening 1" command
<b>Stop</b>	When the control unit receives the command, it stops the manoeuvre in progress gradually and in a short time (not instantly).
<b>Stop and brief reversal</b>	The control unit stops the manoeuvre in progress and causes the automation to perform a brief reversal in the opposite direction
<b>Stop and reversal</b>	The control unit causes the current manoeuvre to stop and activates the full reversal in the opposite direction.  The control unit causes the current manoeuvre to stop and activates the full reversal in the opposite direction.
<b>Temporary stop</b>	The control unit stops the current manoeuvre so long as the command remains active. When the command is no longer active, the control unit causes the application to perform an opening manoeuvre.  WARNING = During the execution of the opening manoeuvre, this command is ignored
<b>Stop</b>	When the control unit receives the command, it instantly stops the manoeuvre in progress.
<b>Stop and brief reversal</b>	When the control unit receives the command, it instantly stops the manoeuvre in progress and causes the application to perform a brief reversal in the opposite direction.
<b>Stop and reversal</b>	When the control unit receives the command, it stops the manoeuvre in progress immediately and causes the application to perform a full reversal in the opposite direction

## 18 INPUT CONFIGURATION

This item groups the available configurations that can be associated with the inputs present on the control unit and on expansion boards, if any (optional accessories).

The inputs present on the control unit's terminal block are identified as:

- **INPUT 1** (0x71) (Default = **Step-by-Step**)
- **INPUT 2** (0x72) (Default = **Photo**)

The inputs available on the expansion boards are identified as:

- **INPUT 3** (0x73) (where available) (Default = **Open**)
- **INPUT 4** (0x74) (where available) (Default = **Close**)
- **INPUT 5** (0x7C) (where available) (Default = **Partial open 1**)
- **INPUT 6** (0x7D) (where available) (Default = **Emergency Open**)



In addition to the basic and extended commands described in the “*Basic parameters*” and “*Extended commands*” paragraphs, the functions indicated in the table below are included for the terminal block inputs

Table 41

INPUT CONFIGURATION	
FUNCTION	DESCRIPTION
<b>Photo</b> (input managed as NC)	The control unit manages the input as a safety device interpreting its switching as an intervention of the “PHOTO” photocell.
<b>Photo 1</b> (input managed as NC)	The control unit manages the input as a safety device interpreting its switching as an intervention of the “PHOTO1” photocell.
<b>Photo 2</b> (input managed as NC)	The control unit manages the input as a safety device interpreting its switching as an intervention of the “PHOTO2” photocell.
<b>Photo 3</b> (input managed as NC)	The control unit manages the input as a safety device interpreting its switching as an intervention of the “PHOTO3” photocell.
<b>Opening on Emergency</b> (input managed as NC)	The control unit forces an opening command when the input opens. No command can interrupt the manoeuvre started by the emergency input and only the intervention of a safety device (photocells or STOP input) can suspend the request.  Warning = If a safety device intervenes, the control unit will attempt the manoeuvre several times. In case of repeated interventions, the manoeuvre will be suspended.
<b>Closing on Emergency</b> (input managed as NC)	The control unit forces a closing command when the input opens. No command can interrupt the manoeuvre started by the emergency input and only the intervention of a safety device (photocells or STOP input) can suspend the request.  Warning = If a safety device intervenes, the control unit will attempt the manoeuvre several times. In case of repeated interventions, the manoeuvre will be suspended.



**Important – To ensure that the control unit works properly, each input must be associated with a command or function and then with the desired operating mode according to “*Control mode description*”. All the parameters are pre-set in the factory but can be modified as required.**

# 19 OUTPUT CONFIGURATION

This section lists the functions available on the outputs present on the control unit and on expansion boards, if any (optional accessories).

## 19.1 CONTROL UNIT OUTPUT CONFIGURATION

This item groups the available functions that can be associated with outputs present on the control unit of an automation.

The control unit outputs are identified as:

- **OUTPUT 1** (0x51) (Default = **Warning light**)
- **OUTPUT 2** (0x52) (Default = **OGI**)



**WARNING! The outputs are limited to 24 VDC – 10 W**

**Table 42**

CONTROL UNIT OUTPUT CONFIGURATION		
FUNCTION	ID	DESCRIPTION
<b>Not specified (None)</b>		The control unit forces the status of the output to off. No command or interaction of the control unit can switch the output's status.
<b>Sca/OGI (Open Gate Indicator)</b>	(0x01)	The programmed indicator light indicates the operating statuses of the control unit: light off = application in maximum Closing position; slow flashing = application in Opening manoeuvre execution phase; quick flashing = application in Closing manoeuvre execution phase; light permanently on = application in maximum Opening position.
<b>Gate open</b>	(0x02)	The programmed indicator light indicates the operating statuses of the control unit: light on = application in maximum Opening position light off = application in other positions.
<b>Gate closed</b>	(0x03)	The programmed indicator light indicates the operating statuses of the control unit: light on = application in maximum Closing position; light off = application in other positions. Output active 24 VDC / max 10 W.
<b>Maintenance</b>	(0x04)	The programmed light indicates the count of manoeuvres completed and therefore the need (or not) for system maintenance operations: light on for 2 seconds at the start of the opening manoeuvre = number of manoeuvres below 80%; light flashing during execution of the entire manoeuvre = number of manoeuvres between 80 and 100%; light always flashing = number of manoeuvres above 100%.
<b>PhotoTest</b>	(0x25)	The output powers the relay photocells and verifies their integrity when the manoeuvre starts. The type of interaction is strictly linked to the configuration of the inputs configured as PHOTO, PHOTO1 and PHOTO2.
<b>Warning light</b>	(0x05)	This function enables the warning light to indicate the execution of the current manoeuvre. The flashes occur at regular intervals (0,5 seconds lit; 0,5 seconds off). This mode allows for commanding the output with a voltage of 12Vdc.
<b>Warning light1</b>	(0x13)	This function enables the output to switch from on to off regardless of the status of the motor. The activations occur at regular intervals (0,5 seconds on; 0,5 seconds off).
<b>Warning light 24V</b>	(0x17)	This function enables the warning light to indicate the execution of the current manoeuvre. The flashes occur at regular intervals (0,5 seconds lit; 0,5 seconds off). This mode commands the output with a voltage of 24Vdc.
<b>Courtesy light</b>	(0x06)	The output follows the status of the courtesy light present on the control unit.
<b>Door status</b>	(0x1E)	The output follows the status of the motor's movement regardless of the direction of motion: light on = motor manoeuvring light off = motor stationary.
<b>Presence</b>	(0x23)	With the automation stationary, the intervention of any photocell activates the output for 5 seconds (the time cannot be programmed).
<b>Electric lock 1 [note 1]</b>	(0x07)	With this function programmed, when an opening manoeuvre is performed the electric lock activates for a duration equal to the value set in the "electric lock time" function.
<b>Electric locking device 1 [note 1]</b>	(0x09)	On the output it is possible to connect an electric locking device with latch (versions with electric magnet only or without electronic devices). During the opening manoeuvre, the electric locking device activates and remains active to free the automation and perform the manoeuvre. During the closing manoeuvre, ensure that the electric locking device re-engages mechanically.



CONTROL UNIT OUTPUT CONFIGURATION		
FUNCTION	ID	DESCRIPTION
<b>Suction cup 1</b> [note 1]	(0x0B)	With this function programmed, the output activates when the application is in the maximum closing position. Note – The output is disabled in all other situations. When the suction cup deactivates, before an opening manoeuvre is started, the time interval programmed in the “suction cup time” function intervenes
<b>One-way traffic light</b>	(0x1A)	If programmed as “One-way traffic light”: light on = application in maximum opening position light off = application in any other position.
<b>Red traffic light</b>	(0x0D)	This function indicates that the application is active during the phases of a closing manoeuvre: slow flashing = execution of Closing manoeuvre; light permanently on = application in maximum closing position; light off = application in other positions.
<b>Green traffic light</b>	(0x0E)	This function indicates that the application is active during the phases of an opening manoeuvre: slow flashing = execution of opening manoeuvre; light permanently on = application in maximum opening position; light off = application in other positions.
<b>Buzzer</b>	(0x1D)	This function activates the buzzer if the UL325 function is active (where available).
<b>Radio channel no. 1</b> <b>Radio channel no. 2</b> <b>Radio channel no. 3</b> <b>Radio channel no. 4</b>	(0x0F) (0x10) (0x11) (0x12)	If this radio channel is set for the configuration of the output, this output activates when a command is set with the transmitter and remains in this state so long as the command persists. It is useful if external devices are installed (for example, an auxiliary light) in the same system to be controlled with a single transmitter.  WARNING = If this radio channel is not free on the control unit receiver, due to having been previously memorised with a command, the control unit will only activate the programmed output when the channel is activated with the transmitter, ignoring the command towards the motor.  Warning = This function is not currently available for transmitters of the BiDi family.

[note 1] = Only devices containing the electric magnet only can be connected

## 19.2 OUTPUT CONFIGURATION - EXPANSION MODULES

This item groups the available functions that can be associated with outputs present on the expansion boards.  
The expansion board outputs are identified as:

- **OUTPUT 3** (0x53) (where available) (Default = **Sca/OGI**)
- **OUTPUT 4** (0x54) (where available) (Default = MLAE22 = **Presence light**, MLEA44 = **Gate closed**)
- **OUTPUT 5** (0x55) (where available) (Default = **Radio channel 4**)
- **OUTPUT 6** (0x56) (where available) (Default = **Phototest**)



**WARNING! The outputs are limited to 24 VDC – 10 W**

Table 43

CONFIGURATION OF THE EXPANSION BOARD OUTPUTS		
FUNCTION	ID	DESCRIPTION
<b>Not specified</b> (None)		The control unit forces the status of the output to off. No command or interaction of the control unit can switch the output's status.
<b>Sca/OGI</b> (Open Gate Indicator) [note 2]	(0x01)	The programmed indicator light indicates the operating statuses of the control unit: light off = application in maximum Closing position; slow flashing = application in Opening manoeuvre execution phase; quick flashing = application in Closing manoeuvre execution phase; light permanently on = application in maximum Opening position.
<b>Gate open</b>	(0x02)	The programmed indicator light indicates the operating statuses of the control unit: light on = application in maximum Opening position light off = application in other positions.
<b>Gate closed</b>	(0x03)	The programmed indicator light indicates the operating statuses of the control unit: light on = application in maximum Closing position; light off = application in other positions. Output active 24 VDC / max 10 W.
<b>Maintenance</b> [note 2]	(0x04)	The programmed light indicates the count of manoeuvres completed and therefore the need (or not) for system maintenance operations: light on for 2 seconds at the start of the opening manoeuvre = number of manoeuvres below 80%; light flashing during execution of the entire manoeuvre = number of manoeuvres between 80 and 100%; light always flashing = number of manoeuvres above 100%.

**CONFIGURATION OF THE EXPANSION BOARD OUTPUTS**

FUNCTION	ID	DESCRIPTION
<b>PhotoTest</b>	(0x25)	The output powers the relay photocells and verifies their integrity when the manoeuvre starts. The type of interaction is strictly linked to the configuration of the inputs configured as PHOTO, PHOTO1 and PHOTO2.
<b>Warning light1</b> [note 2]	(0x13)	This function enables the output to switch from on to off regardless of the status of the motor. The activations occur at regular intervals (0,5 seconds on; 0,5 seconds off).
<b>Warning light 24V</b>	(0x17)	This function enables the warning light to indicate the execution of the current manoeuvre. The flashes occur at regular intervals (0,5 seconds lit; 0,5 seconds off). This mode commands the output with a voltage of 24Vdc.
<b>Courtesy light</b>	(0x06)	The output follows the status of the courtesy light present on the control unit.
<b>Presence</b>	(0x23)	With the automation stationary, the intervention of any photocell activates the output for 5 seconds (the time cannot be programmed).
<b>Electric lock 1</b> [note 1] [note 3]	(0x07)	With this function programmed, when an opening manoeuvre is performed the electric lock activates for a duration equal to the value set in the "electric lock time" function.
<b>Electric locking device 1</b> [note 1] [note 2]	(0x09)	On the output it is possible to connect an electric locking device with latch (versions with electric magnet only or without electronic devices).  During the opening manoeuvre, the electric locking device activates and remains active to free the automation and perform the manoeuvre. During the closing manoeuvre, ensure that the electric locking device re-engages mechanically.
<b>Suction cup 1</b> [note 1] [note 2]	(0x0B)	With this function programmed, the output activates when the application is in the maximum closing position.  Note – The output is disabled in all other situations. When the suction cup deactivates, before an opening manoeuvre is started, the time interval programmed in the "suction cup time" function intervenes.
<b>One-way traffic light</b>	(0x1A)	If programmed as "One-way traffic light": light on = application in maximum opening position light off = application in any other position.
<b>Red traffic light</b>	(0x0D)	This function indicates that the application is active during the phases of a closing manoeuvre:  slow flashing = execution of Closing manoeuvre; light permanently on = application in maximum closing position; light off = application in other positions.
<b>Green traffic light</b>	(0x0E)	This function indicates that the application is active during the phases of an opening manoeuvre:  slow flashing = execution of opening manoeuvre; light permanently on = application in maximum opening position; light off = application in other positions.
<b>Radio channel no. 1</b> <b>Radio channel no. 2</b> <b>Radio channel no. 3</b> <b>Radio channel no. 4</b>	(0x0F) (0x10) (0x11) (0x12)	If this radio channel is set for the configuration of the output, this output activates when a command is set with the transmitter. It is useful if external devices are installed (for example, an auxiliary light) in the same system to be controlled with a single transmitter.  WARNING = If this radio channel is not free on the control unit receiver, due to having being previously memorised with a command, the control unit will only activate the programmed output when the channel is activated with the transmitter, ignoring the command towards the motor.  Warning = This function is not currently available for transmitters of the BiDi family.

[note 1] = Only devices containing the electric magnet only can be connected.

[note 2] = This function is not available on the power output.

[note 3] = Use an external relay and a back-up power supply.

**NOTES**

A series of horizontal dashed lines for writing notes.



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