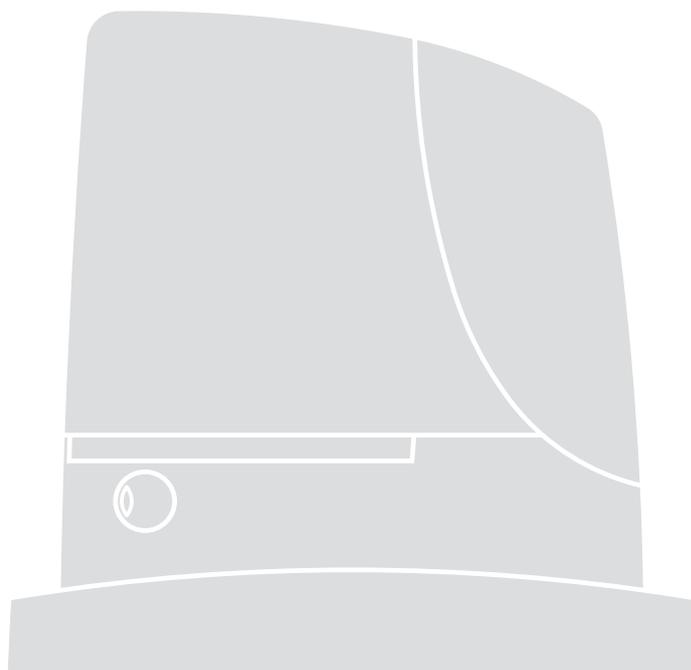


RUN400HS

RUN400HS/V1

RUN1200HS

RUN1200HS/V1



## Sliding Gate Opener

**EN** - Instructions and warnings for installation and use

**IT** - Istruzioni ed avvertenze per l'installazione e l'uso

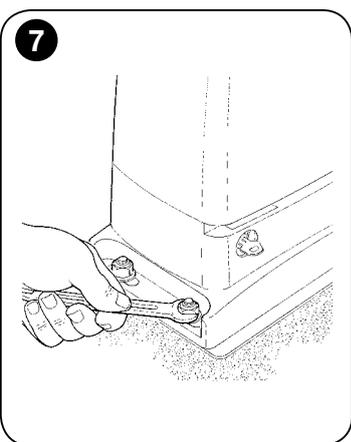
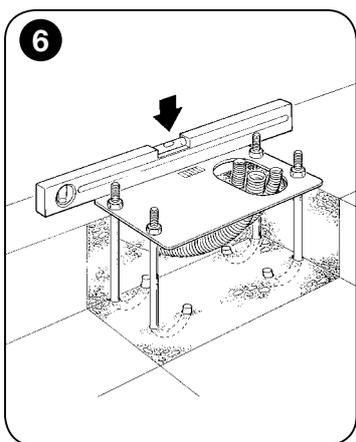
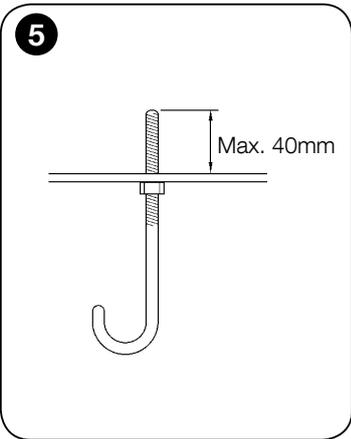
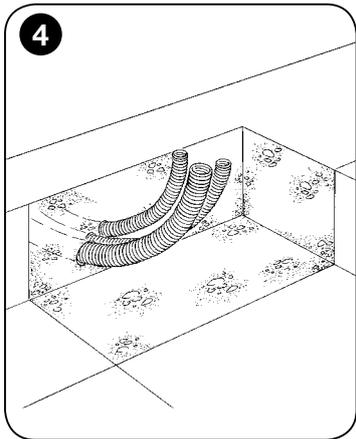
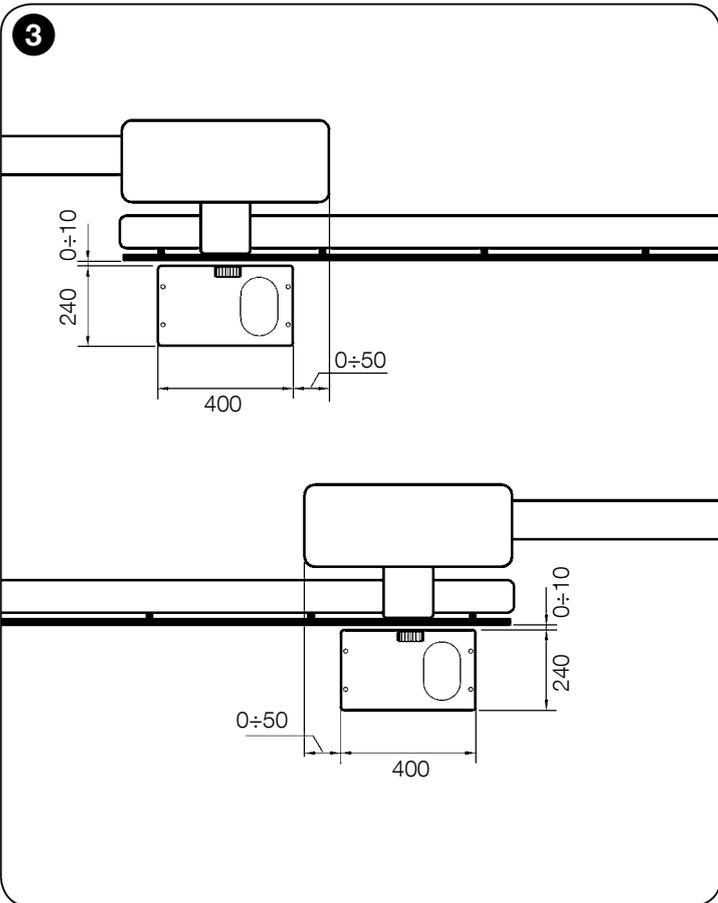
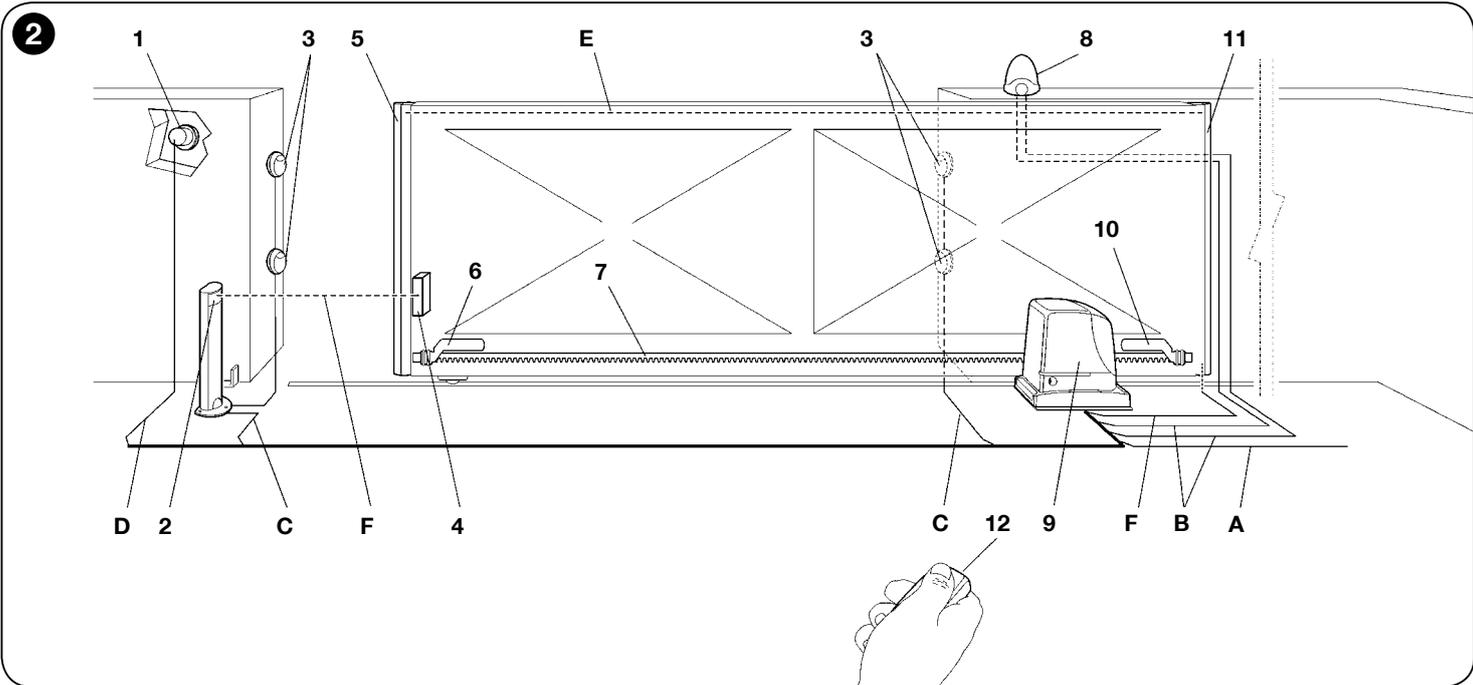
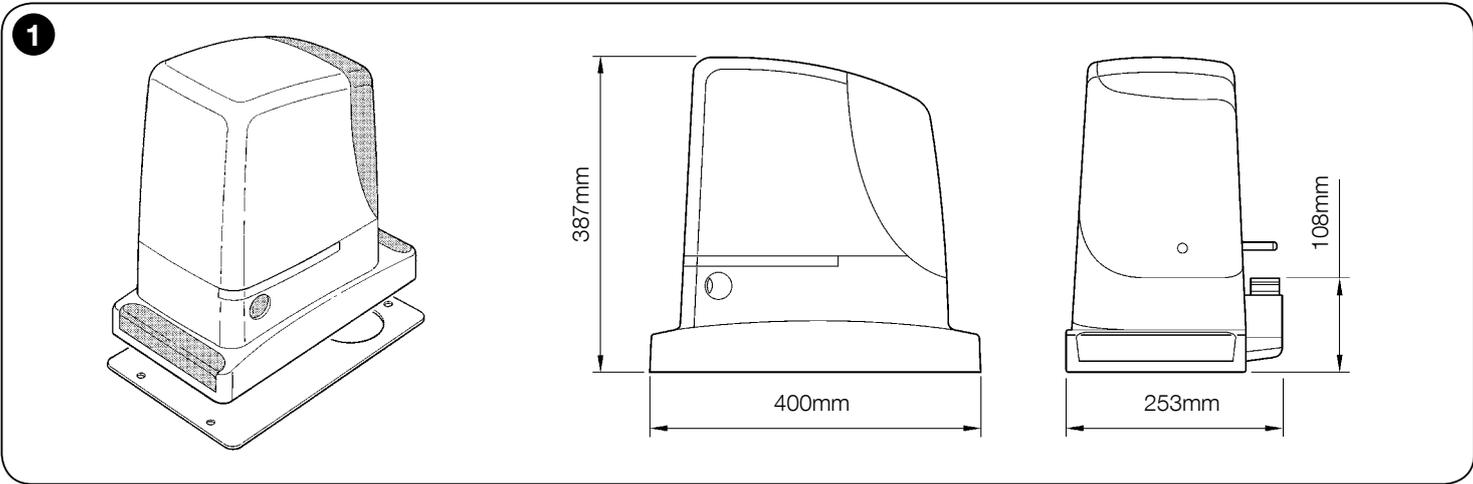
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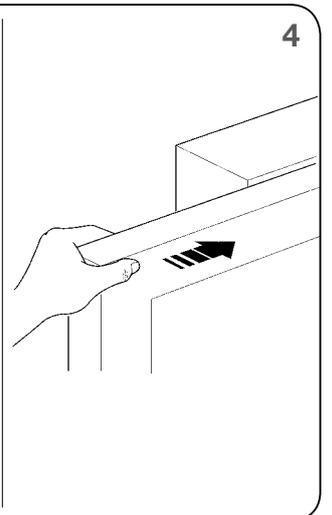
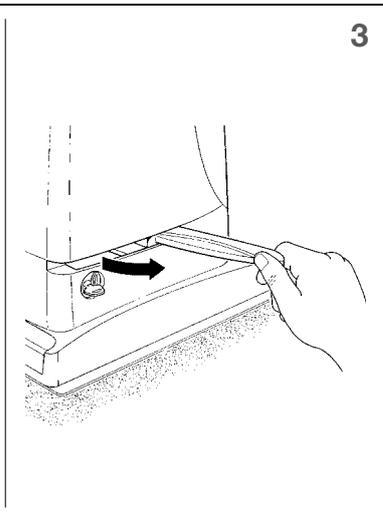
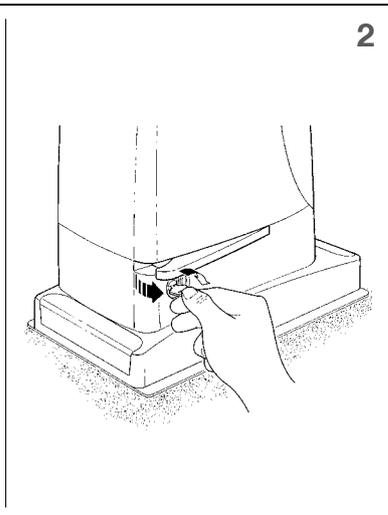
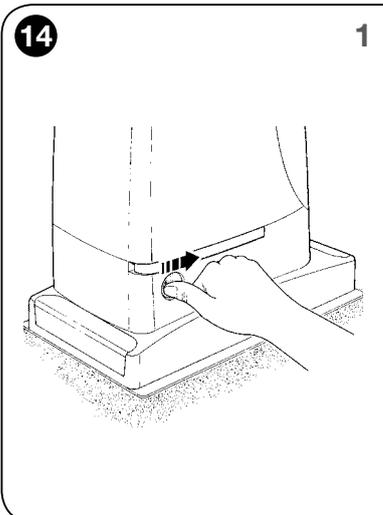
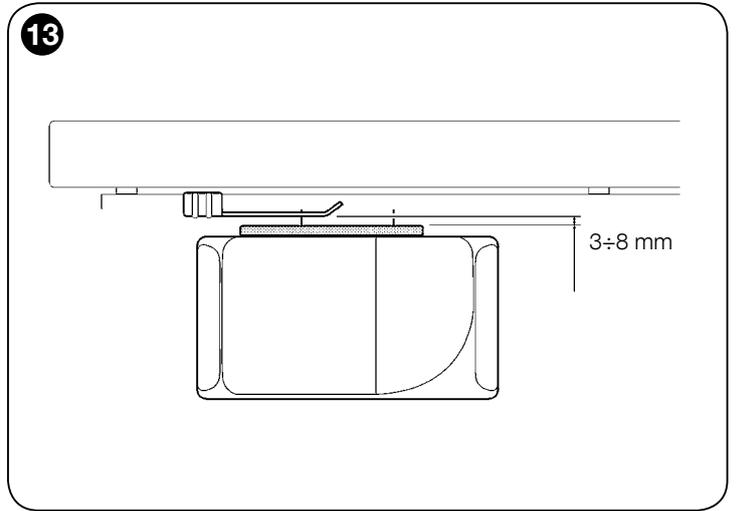
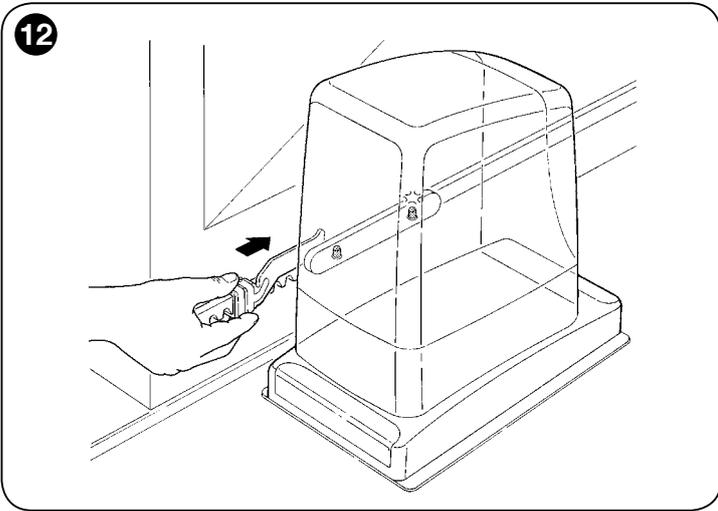
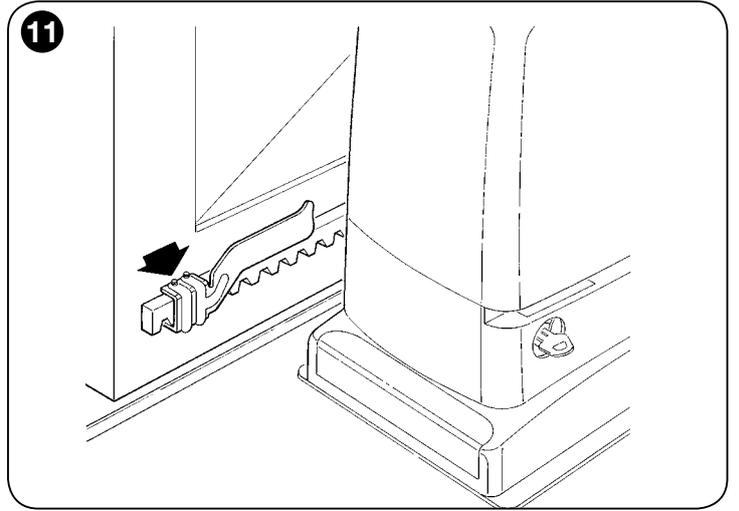
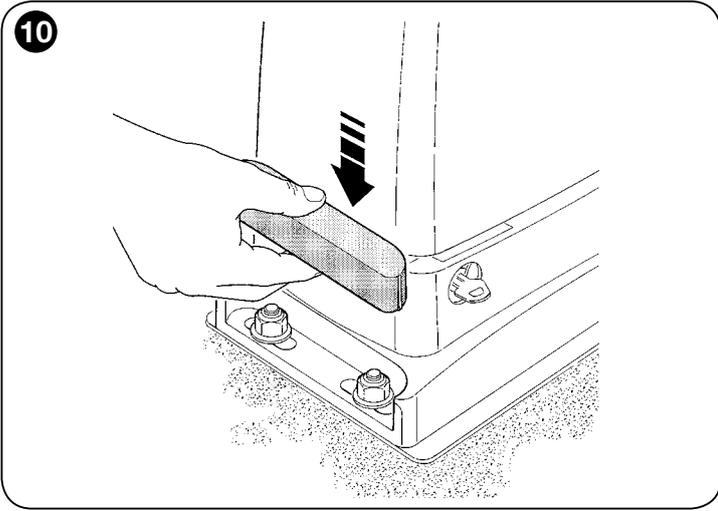
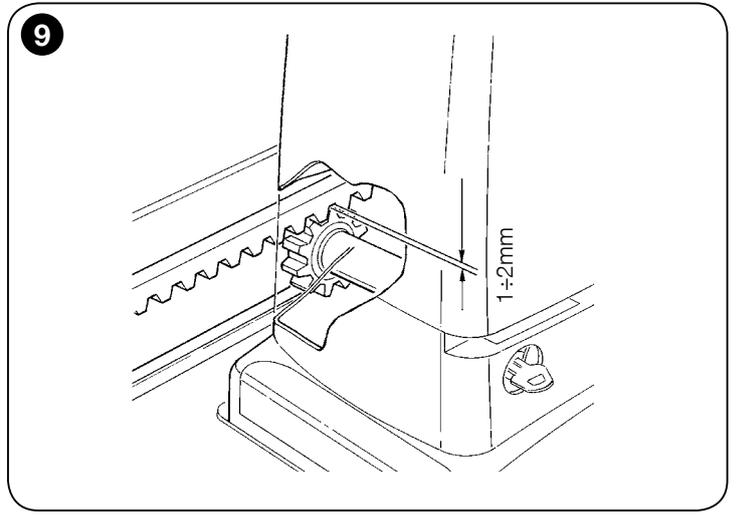
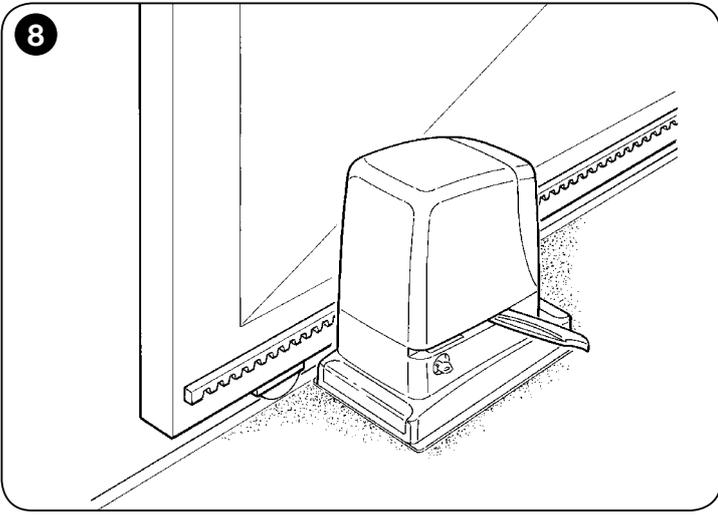
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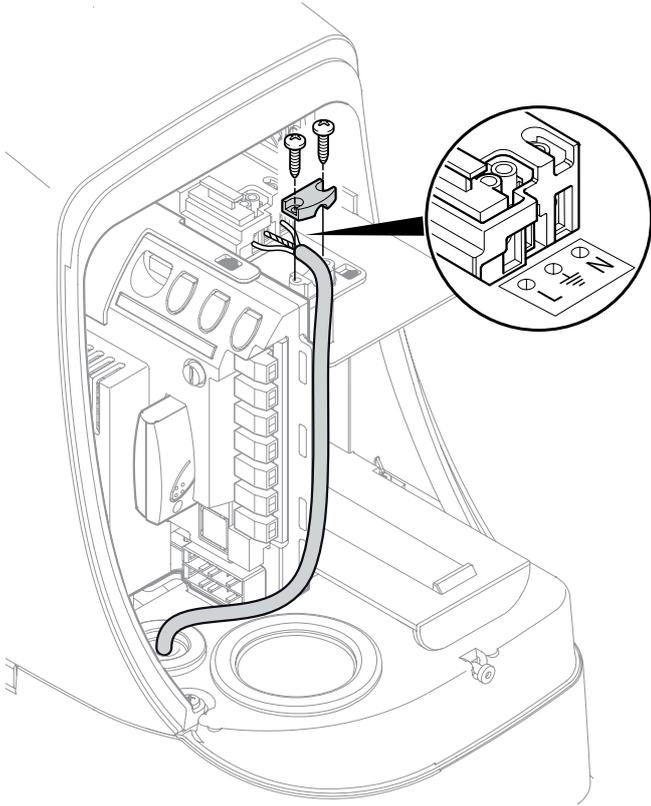
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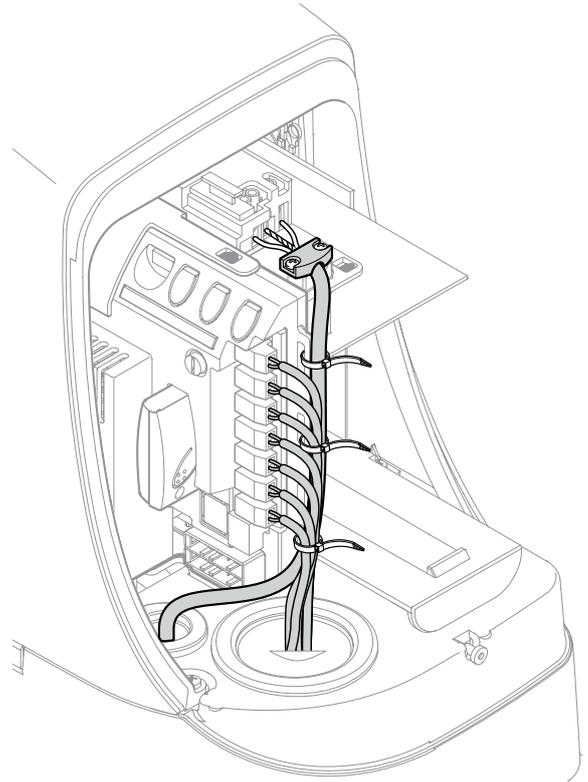




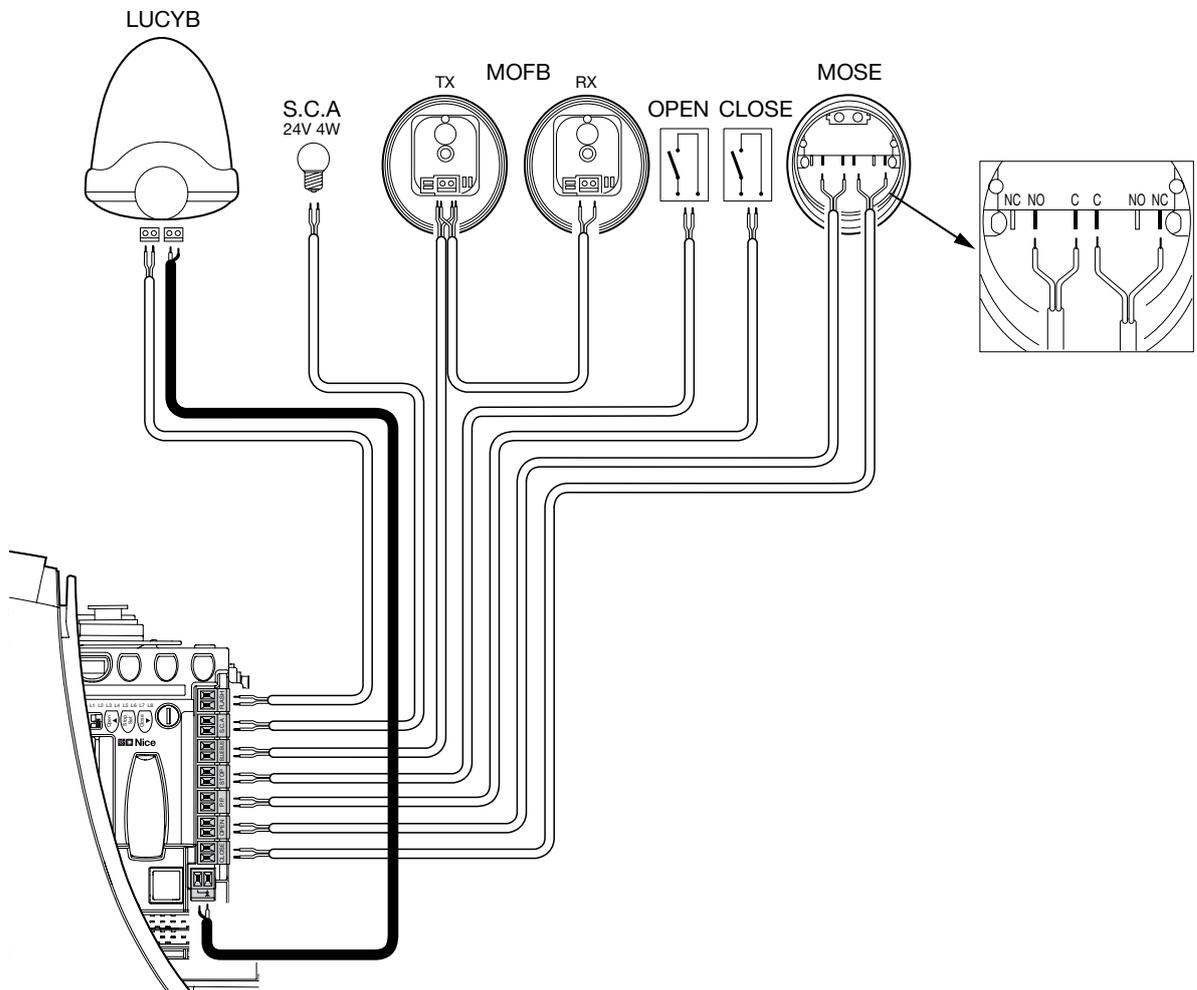
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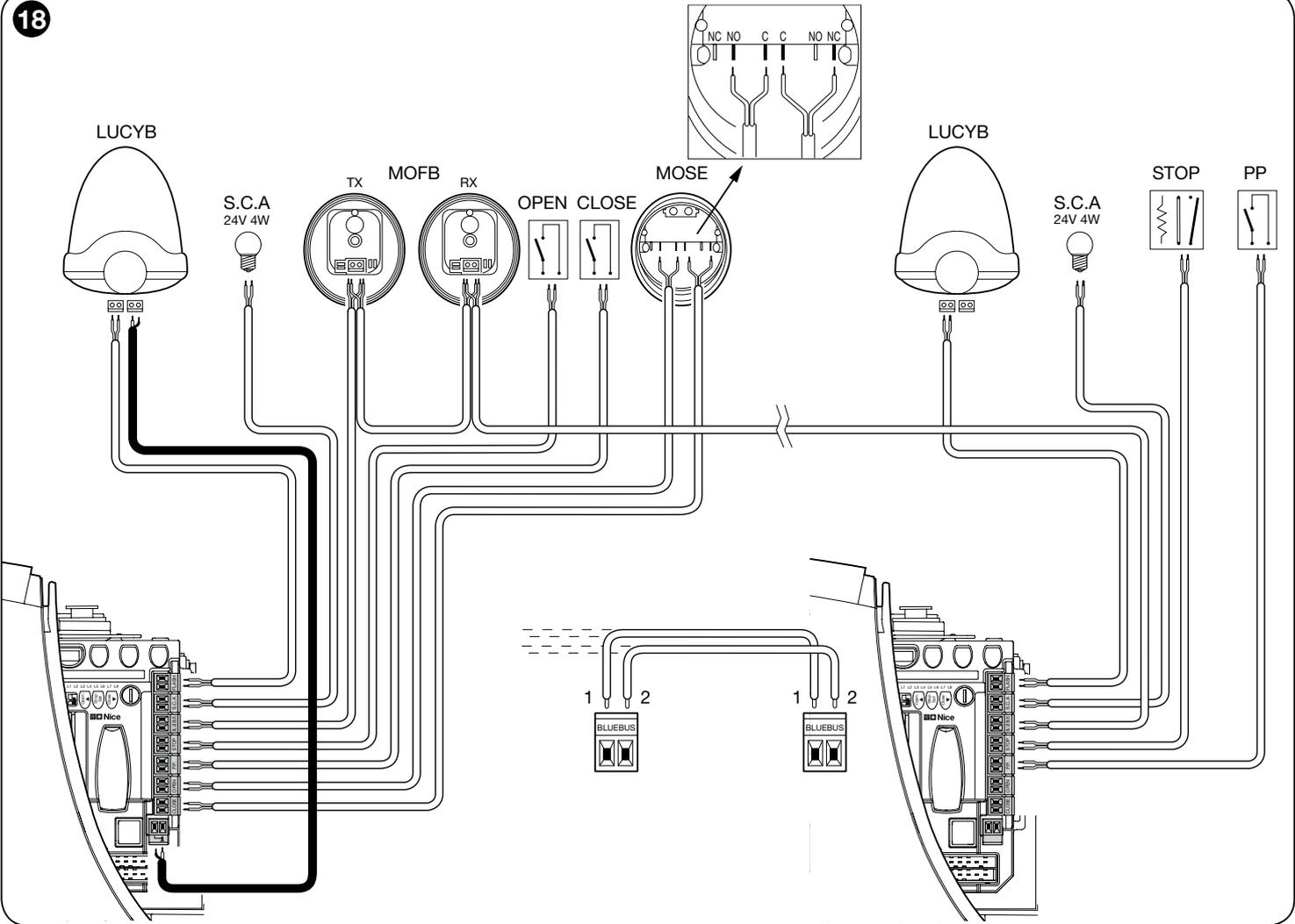
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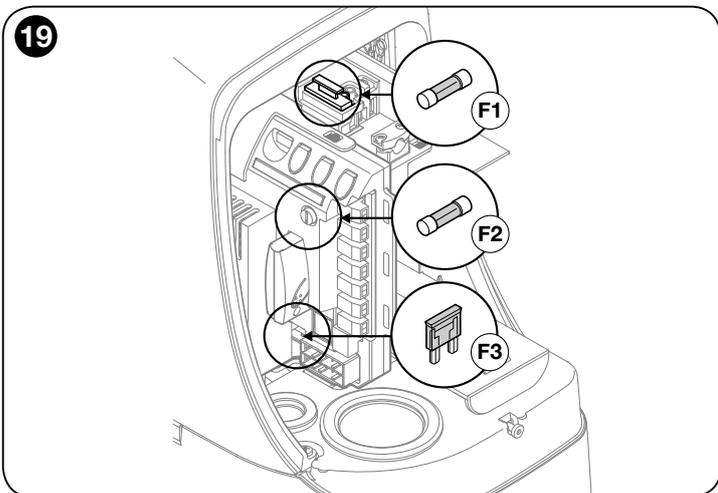
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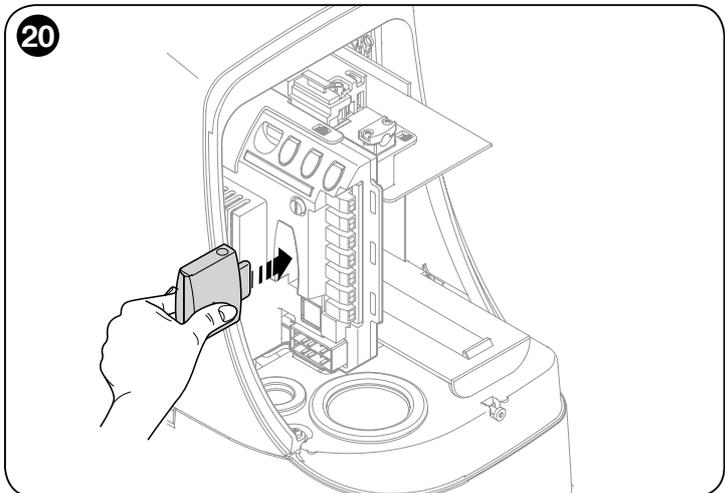
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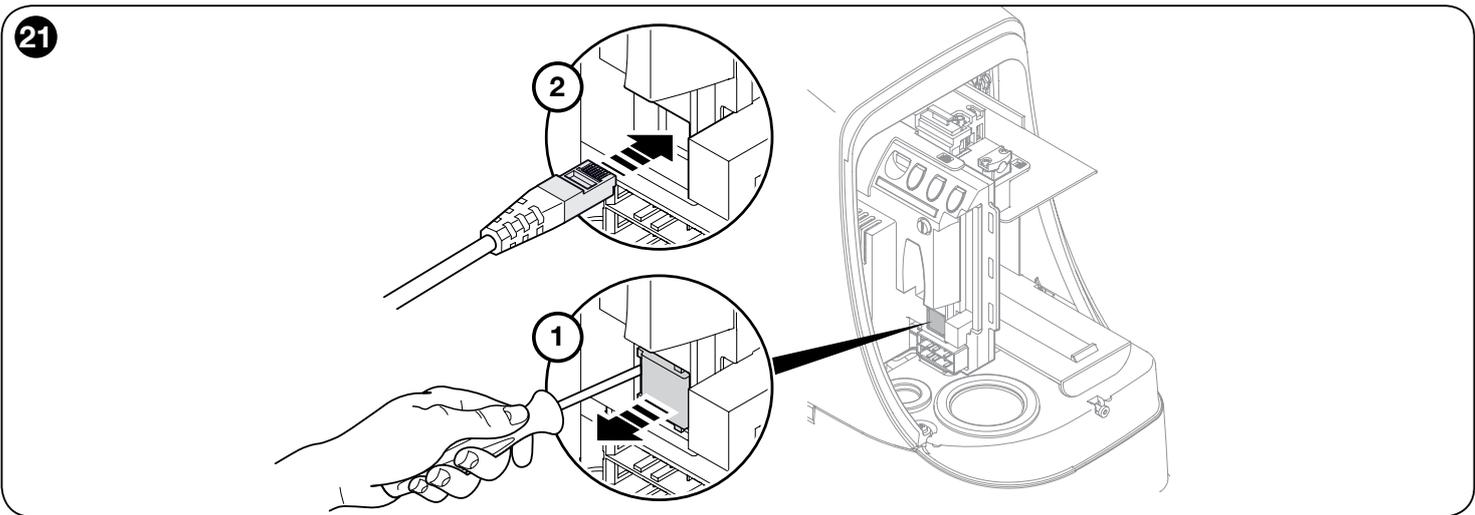
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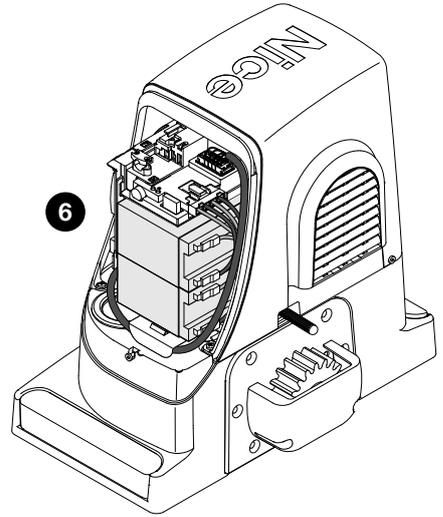
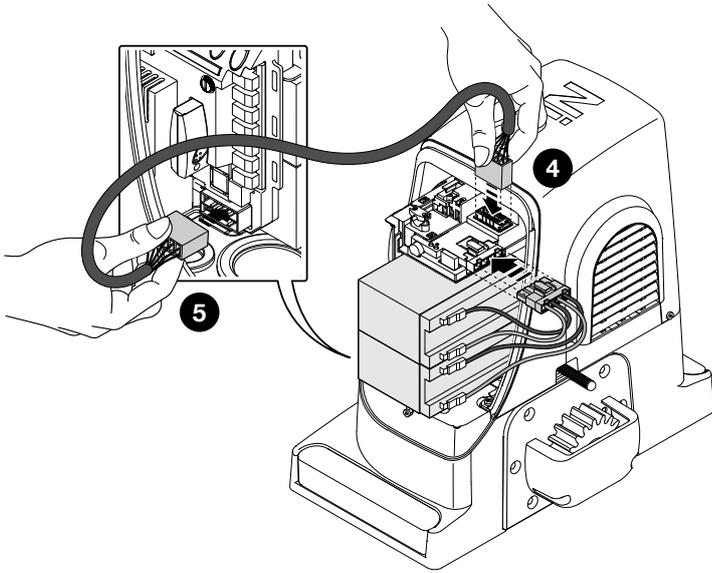
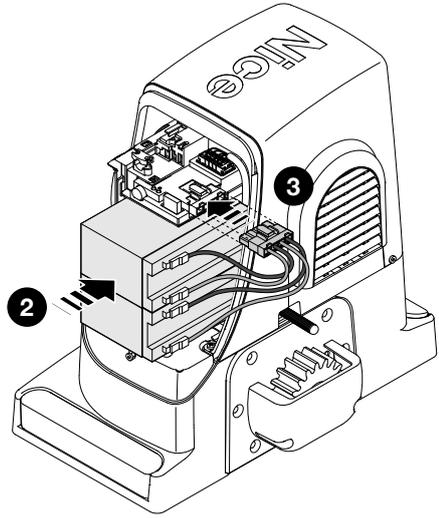
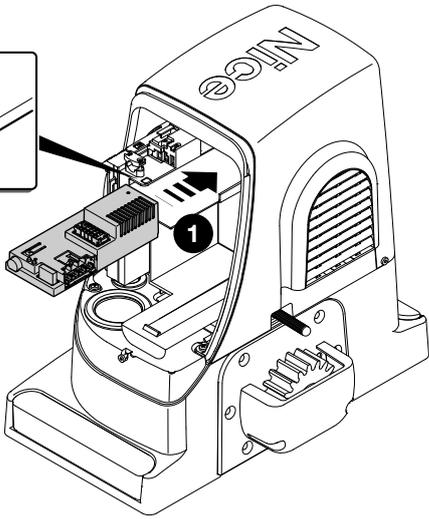
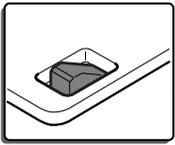
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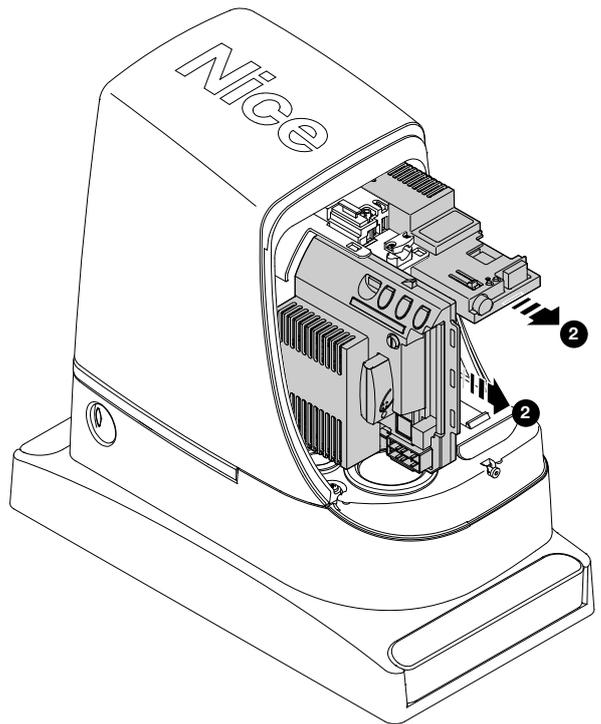
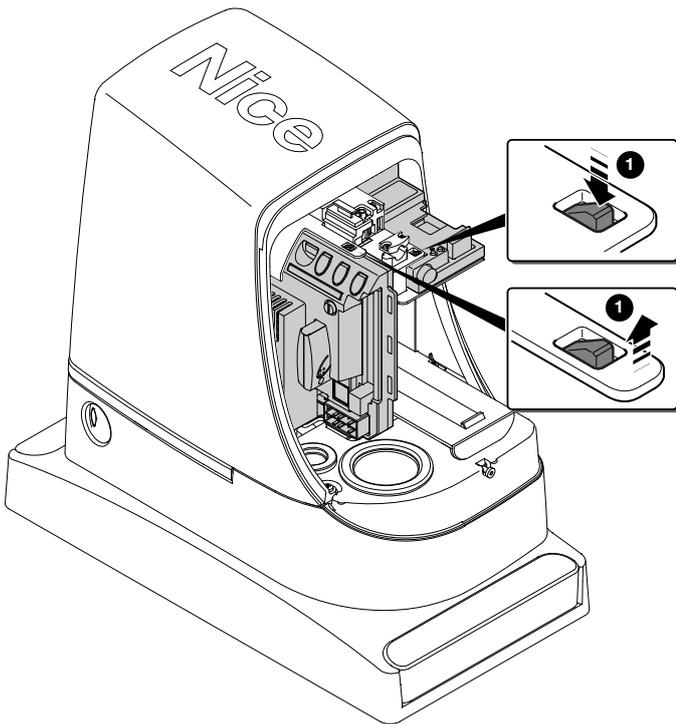
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## 1.1 - Safety warnings

- **WARNING!** – This manual contains important instructions and warnings regarding safety. Incorrect installation could lead to serious injury. Before starting, please read all sections of the manual carefully. If in any doubt, suspend installation and call the Nice Support Service for clarification.

- **WARNING!** - Important: please retain this manual for future maintenance work and product disposal.

Particular warnings concerning the suitable use of this product in relation to the 98/37CE "Machine Directive" (2006/42/CE):

- This product comes onto the market as a "machine component" and is therefore manufactured to be integrated to a machine or assembled with other machines in order to create "a machine", under the directive 2006/42/CE, only in combination with other components and in the manner described in the present instructions manual. As specified in the directive 2006/42/CE the use of this product is not admitted until the manufacturer of the machine on which this product is mounted has identified and declared it as conforming to the directive 2006/95/CE.

Particular warnings concerning the suitable use of this product in relation to the 73/23/EEC "Low Voltage" Directive and 2006/95/CE:

- This product responds to the provisions foreseen by the "Low Voltage" Directive if used for the use and in the configurations foreseen in this instructions manual and in combination with the articles present in the Nice S.p.a. product catalogue. If the product is used in unforeseen configurations or with other unforeseen products, the requirements may not be guaranteed; the use of the product is prohibited in these situations until compliance with the specified requirements of the directive have been verified by the installers.

Particular warnings concerning the suitable use of this product in relation to the 2004/108/CE "Electromagnetic Compatibility" Directive:

- This product has been subjected to electromagnetic compatibility tests in the most critical situations of use and in the configurations foreseen in this instructions manual and in combination with the articles present in the Nice S.p.a. product catalogue. If the product is used in unforeseen configurations or with other unforeseen products, the electromagnetic compatibility may not be guaranteed; the use of the product is prohibited in these situations until compliance with the specified requirements of the directive have been verified by the installers.

## 1.2 - Installation warnings

- Before commencing the installation, check that this product is suitable for controlling your gate (see Chapter 3 and the "Product technical specifications"). If it is not suitable, DO NOT continue with the installation.

- **All installation and maintenance work must be carried out with the automation system disconnected from the electricity supply.** If the power disconnection device cannot be seen from where the automation system is positioned, then before starting work a notice must be attached to the disconnection device bearing the words "CAUTION! MAINTENANCE IN PROGRESS".

- Handle the product with care during installation, taking care to avoid crushing, denting or dropping it, or 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 occur, suspend installation work immediately and contact the Nice Support Service.

- Do not modify any part of the product. Operations other than as specified can only cause malfunctions. The manufacturer declines all liability for damage caused by makeshift modifications to the product.

- If the gate being automated has a pedestrian gate, then the system must include a control device that will inhibit the operation of the motor when the pedestrian gate is open.

- Provide a disconnection device (not supplied) in the plant's power supply grid, with a contact opening distance that permits complete disconnection under the conditions dictated by overvoltage category III.

- **WARNING!** - Turning on the power supply to the motor before you have completed installation is strictly prohibited.

- The key selector must be positioned within view of the automation mechanism, far away from its moving parts, at a minimum height of 1.5 m from the ground and in a location which is not accessible to the public. If it is used in "manned" mode, make sure there are no people in the vicinity of the automation mechanism.

- Check that there are no points where people could become trapped or crushed against fixed parts when the gate is fully open or fully closed; if there are, provide protection for these parts.

- The product may not be considered a complete anti-intrusion protection system. If you wish to have effective protection, combine the automation mechanism with other security devices.

- Check whether other devices are necessary to complete the automation mechanism on the basis of the specific circumstances of use and the hazards present; for example, the risk of impact, crushing, cutting, dragging, etc. and all other dangers must be taken into consideration.

- If an automatic switch or a fuse is tripped, identify and eliminate the reason

before resetting it.

- The automation mechanism cannot be used before it has been commissioned as specified in the chapter on “Testing and commissioning”.
- Inspect the automation mechanism frequently to check for unbalancing, signs of wear or damage to electrical cables and mechanical parts. Do not use the automation mechanism if adjustment or repair is required.
- If it is not used for a long time, remove the optional battery and keep it in a dry place to make sure it does not leak harmful substances.
- The packing materials of the product must be disposed of in compliance with local regulations.

### 1.3 - Warnings about use

- 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.
- Any children near the automation system must be kept under supervision to ensure that they do not play with it.
- Do not allow children to play with the fixed control devices. Keep remote control devices out of their reach as well.
- Clean the surfaces of the product with a soft, slightly damp cloth. Use only water; do not use cleaning products or solvents.

## 2 PRODUCT DESCRIPTION AND INTENDED USE

This product is intended to be used to automate sliding gates used in residential premises. **CAUTION! – All uses other than the intended use described and use in environmental conditions other than those described in this manual should be considered improper and forbidden!**

RUN is a line of one-way electromechanical gearmotors with electronic controller and SM type connector for the wireless receiver (optional). Electrical connections with external devices are simplified thanks to use of the “BlueBus”, a technique permitting connection of multiple devices with only 2 wires. The list of devices compatible with RUN over the BlueBus network is given in Chapter 7.3.1 “BlueBus”; an up-to-date list, with compatibility specifications, is also available on [www.niceforyou.com](http://www.niceforyou.com).

RUN has a remote programmer connector to facilitate installation, maintenance and troubleshooting; see Chapter 7.8.1 “Remote programmer”. If mains powered, Run can be fitted with a backup battery to provide power during power failures so that it can be operated for several hours (see par. 7.8.2). In the event of power failure, it is still possible to operate the gate by releasing the gearmotor with its release handle (see par. 3.6).

The automation mechanism permits installation of various accessories to add functions and improve security.

The RUN product line includes the following products (table 1 - see fig.1).

TABLE 1 comparison of basic characteristics of RUN gearmotors		
Gearmotor type	RUN400HS	RUN1200HS
Type of limit switch	electromechanical	electromechanical
Max. gate length	14 mt	14 mt
Max. gate weight	400 kg	1200 kg
Maximum startup torque (corresponding to force)	12,3 Nm (340 N)	28,4 Nm (790 N)
Motor	24V; 5500RPM	24V; 3100RPM

Note: 1kg = 9.81 N, so that, for instance: 1390 N = 142 kg

## 3 INSTALLATION

### 3.1 - Tests prior to installation

**Caution! - The installation of RUN must be carried out by qualified personnel in compliance with current legislation, standards and regulations, and the directions provided in this manual.**

Before proceeding with the installation of RUN you must:

- Check that all the materials are in excellent condition, suitable for use and that they conform to the standards currently in force.
- Make sure that the structure of the gate is suitable for automation.
- Make sure that the weight and dimensions of the gate fall within the specified operating limits provided in chapter 3.2 “Operating limits”.
- Check that the force required to start the movement of the gate is less than half the “maximum torque”, and that the force required to keep the gate in movement is less than half the “nominal torque”. Compare the resulting values with those specified in the “Technical Characteristics”. The manufacturer recommends a 50% margin on the force, as unfavourable climatic conditions may cause an increase in the friction.
- Make sure that there are no points of greater friction in the opening or closing phases of the gates.
- Check that there is no risk of derailment or that the gates may come off their guides.
- Make sure that the mechanical stops are sturdy enough and that there is no risk of deformation even if the gate hits the mechanical stop violently.
- Make sure that the gate section is balanced, i.e. it must not move if left still 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.
- Make sure that the installation area enables the release of the gearmotor and that it is safe and easy to release it manually.
- Make sure that the mounting positions of the various devices are protected from impacts and that the mounting surfaces are sufficiently sturdy.
- Components must never be immersed in water or other liquids.
- Keep RUN away from heat sources and open flames; in acid, saline or potentially explosive atmosphere; this could damage RUN and cause malfunctions or dangerous situations.
- If there is an access door in the gate, or within the range of movement of the gate, make sure that it does not obstruct normal travel and, if necessary, provide an appropriate interlock system.
- Connect the control unit to an electricity supply with a safety earth system.
- Connect the gate to the protective earth in accordance with current legislation.
- Provide a device on the electricity supply line that ensures complete disconnection of the automation mechanism from the grid. The disconnection device must have contacts with an opening distance large enough to permit complete disconnection under the conditions sanctioned by overvoltage category III, in accordance with installation regulations. The device ensures quick, safe disconnection from the power supply if needed, and must therefore be positioned in view of the automation mechanism. If, on the other hand, it is located in a position which is not visible, there must be a system for preventing accidental or unauthorized reconnection with the power grid to prevent this risk. The disconnection device is not supplied with the product.

### 3.2 - Operating limits

The “Technical Characteristics” chapter provides all the data needed to determine whether the products of the RUN line are suitable for the intended application.

The structural characteristics of RUN make it suitable for use on sliding gates in conformity with the limits indicated in tables 2 and 3.

The effective suitability of RUN to automate a particular sliding gate depends on the friction as well as other correlated factors, such as ice, that could interfere with the movement of the gate.

For an effective control it is absolutely vital to measure the force necessary to move the gate throughout its entire run and ensure that this is less than half of the “nominal torque” indicated in chapter 8 “Technical characteristics” (a 50% margin on the force is recommended, as unfavourable climatic conditions may cause an increase in the friction); furthermore, it is necessary to take into consideration the data indicated in tables 1 and 2 to establish the number of cycles/hour, consecutive cycles and maximum speed allowed.

**TABLE 2 - Limits in relation to the length of the gate**

Leave width (m)	RUN400HS		RUN1200HS	
	Max. no. of cycles/hour	Max. no. of consecutive cycles	Max. no. of cycles/hour	Max. no. of consecutive cycles
Up to 4	67	33	36	21
4 ÷ 6	45	26	26	15
6 ÷ 8	37	21	23	12
8 ÷ 10	29	18	17	10
10 ÷ 12	25	15	14	8
12 ÷ 14	22	13	13	7

**TABLE 3 - Limits in relation to the weight of the gate**

Gate weight (kg)	RUN400HS	RUN1200HS
	% cycles	% cycles
50 ÷ 100	100%	100%
100 ÷ 200	50	80
200 ÷ 400	30	75
400 ÷ 550	---	60
550 ÷ 800	---	50
800 ÷ 1000	---	40
1000 ÷ 1200	---	30

**3.2.1 - Product durability**

Durability is the average economic life span of the product. The value of the life span is strongly influenced by the intensity of the manoeuvres, i.e. the sum of all factors that contribute to product wear, see **Table 4**.

To estimate the life span of your automated device, proceed as follows:

- 01. Add the values of the items in **Table 4** regarding the system conditions;
- 02. In **Graph 1** from the value obtained above, trace a vertical line until it intersects the curve; from this point trace a horizontal line until it intersects the line of the "manoeuvre cycles". The obtained value is the estimated life span of your product.

The lifetime values specified in the graph are only obtainable if the maintenance schedule is strictly observed (see chapter "Maintenance schedule"). The estimation of durability is made on the basis of design calculations and the results of tests performed on prototypes. As it is only an estimation, it does not represent any form of guarantee on the effective life span of the product.

**Sample durability calculation: automation of a gate with a door 10 m long with a weight of 150 Kg, installed near the sea:**

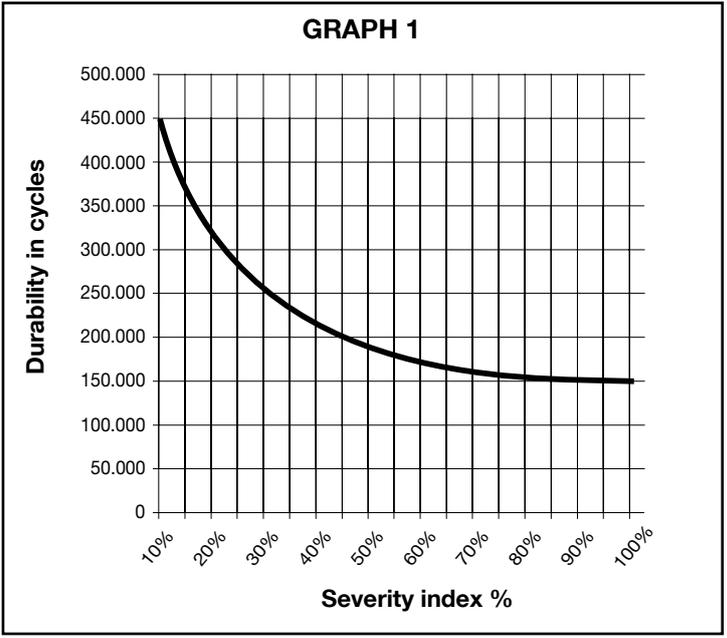
Table 4 shows the "severity index" for this type of installation: 15% (length of gate), 30% (weight of gate) and 10% (ambient temperature > 40°C or < 0°C or humidity > 80%).

These indicators must be added together to obtain the overall severity index, which is in this case 55%. With the value identified (55%), look at the horizontal axis of Graph 1 ("severity index"), and identify the value corresponding to the number of "manoeuvre cycles" our product will be able to perform in its life span, about 180,000 cycles.

**TABLE 4 - Estimated durability in relation to the cycle severity index**

Severity index %	Run	
	400HS	1200HS
<b>Gate length m</b>		
Up to 6	5%	5%
6 ÷ 9	10%	10%
9 ÷ 12	15%	15%
12 ÷ 14	20%	20%
<b>Gate weight (kg)</b>		
50 ÷ 100	10%	5%
100 ÷ 200	30%	10%
200 ÷ 400	60%	20%
400 ÷ 550	-	30%
550 ÷ 800	-	40%
800 ÷ 1000	-	50%
1000 ÷ 1200	-	60%

Other fatigue factors (to be considered if the probability of occurrence is greater than 10%)		
Surrounding temperature greater than 40°C or lower than 0°C or humidity greater than 80%	10%	10%
Presence of dust and sand	15%	15%
Presence of salinity	20%	20%
Operation interrupted by photocell	10%	10%
Operation interrupted by Stop	20%	20%
Active peak force	10%	10%
<b>Total severity index %:</b>		



**3.3 - Works in preparation for installation**

fig. 2 provides an example of an automation system, produced using **Nice components**:

- 1 Key switch
- 2 FT210B receiver
- 3 Photocells
- 4 FT210B transmitter
- 5 Main mobile edge
- 6 Open stop bracket
- 7 Rack
- 8 Flasher with integral antenna
- 9 RUN
- 10 Closed stop bracket
- 11 Secondary mobile edge (optional)
- 12 Transmitter

These parts are positioned according to a typical standard layout. With reference to fig. 2, locate the approximate position for installation of each component envisaged in the system. **Important** – Before installation, prepare the electric cables required for the system, with reference to **fig. 2** and to **"Table 5 - Technical specifications of electric cables"**.

**Caution** - When laying the ducting for routing the electrical cables, also take into account that due to possible deposits of water in the routing ducts, the connection pipelines might create condensate in the control unit, with consequent damage to the electronic circuits.

**TABLE 5 - Technical specifications of electric cables (fig. 2)**

Connection	Cable type	Maximum admissible length
<b>A:</b> POWER cable	1 cable 3 x 1.5 mm <sup>2</sup>	30 m ( <b>note 1</b> )
<b>B:</b> Cable for FLASHER with antenna	1 cable 2 x 0.5 mm <sup>2</sup> 1 RG58 type shielded cable	20 m 20 m (recommended less than 5 m)
<b>C:</b> PHOTOCELL cable	1 cable 2 x 0.5 mm <sup>2</sup>	30 m ( <b>note 2</b> )
<b>D:</b> KEY SWITCH cable	2 cables 2 x 0.5 mm <sup>2</sup> ( <b>note 3</b> )	50 m
<b>E:</b> Cable for CONNECTION between 2 mobile edges	1 cable 3 x 0.5 mm <sup>2</sup> ( <b>note 4</b> )	20 m
<b>F:</b> Cable for mobile edge CONNECTION	1 cable 2 x 0.5 mm <sup>2</sup> ( <b>note 5</b> )	30m

**Note 1** – A power supply cable longer than 30 m may be used provided it has a larger gauge, e.g. 3x2.5mm<sup>2</sup>, and that a safety earthing system is provided near the automation unit.

**Note 2** – If the “BlueBus” cable is longer than 30 m, up to 50 m, a larger gauge (2x1mm<sup>2</sup>) cable is needed.

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

**Note 4** – These cables may be replaced by a single 5 x 1.5 mm<sup>2</sup> cable.

**Note 5** – special devices which enable connection even when the gate is moving must be used to connect movable edges to sliding gates, the figure shows FT210B.

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

### 3.4 - Installation of gearmotor

#### WARNINGS

- **Incorrect installation may cause serious physical injury to those working on or using the system.**
- **Before starting automation assembly, make the preliminary checks as described in paragraphs 3.1 and 3.2.**

If the surface it is to rest on already exists, the gearmotor must be mounted directly onto that surface using appropriate means, e.g. expansion bolts. Otherwise, in order to mount the gearmotor:

01. Dig the foundations as indicated in **fig. 3**.
02. Prepare one or two ducts for routing the cables as indicated in **fig. 4**.
03. Assemble the four anchoring devices onto the foundation plate, placing one nut under and one over the plate; the nut below the plate must be tightened as in **fig. 5** so that the threaded part emerges no more than 40 mm above the plate.
04. Pour the concrete and before it starts to set, place the foundation plate at the levels indicated in **fig. 3**; make sure that it is parallel to the gate and perfectly level as shown in **fig. 6**. Wait for the concrete to set fully.
05. Remove the 4 nuts above the plate and position the gearmotor; make sure it is parallel to the gate and hand tighten down the 4 nuts with their washers (**fig. 7**).
06. Release the gearmotor as indicated in par. 3.6 - Manually releasing and locking the gearmotor.
07. Fully open the gate, then rest the first part of the rack against the pinion and make sure that the start of the rack corresponds to the start of the gate as in **fig. 8**. Make sure that there is some play of about 1-2 mm between the pinion and the rack, and then fix the rack to the gate using appropriate means.
08. Slide the gate and always use the pinion as a reference to fix the other elements of the rack.
09. Cut off the excess section of rack.
10. Try to open and close the gate a number of times and check that the rack moves in line on the pinion with a maximum misalignment of 5 mm and that the play of 1-2 mm between the pinion and the rack is observed throughout the length (**fig. 9**).
11. Tighten down the fixing nuts of the gearmotor, making sure that it is firmly fixed to the ground; cover the fixing nuts with their caps as in (**fig. 10**).
12. Fix the stop brackets as described below (proximity sensor units must be mounted as described in par. 3.5 - Installing brackets with inductive proximity switches):
  - a) Move the gate by hand to the open position, stopping at least 2-3cm before the mechanical stop.
  - b) Slide the bracket on the rack in the opening direction until the stop switch trips. Now move the bracket at least 2cm and secure it to the rack with its grub screws (**fig. 11**).
  - c) Do the same for the closing stop bracket.
13. Lock the gearmotor as indicated in par. Manually releasing and locking the gearmotor in the chapter on “User instructions and warnings”.

### 3.5 - Installing brackets with inductive proximity switches

For units with inductive proximity switches, install the brackets as described below.

01. Move the gate by hand to the open position, stopping at least 2-3cm before the mechanical stop.
02. Slide the bracket further along the rack until the led turns off, see **fig. 12**. Now move the bracket at least 2cm further and secure it to the rack with its grub screws.
03. Move the gate to the closed position by hand and stop at least 2-3cm

before the mechanical stop.

04. Slide the bracket further along the rack until the led turns off. Now move the bracket at least 2cm further and secure it to the rack with its grub screws.

**Caution - For inductive sensors, the bracket must be from 3 to 8 mm away, as shown in fig. 13.**

### 3.6 - Manually releasing and locking the gearmotor

The gearmotor is equipped with a mechanical blocking system to enable manual opening and closing of the gate.

These manual operations should only be performed in the event of a power failure, malfunctions or during the installation procedures.

01. Slide the lock cover disk (step 1 - **fig. 14**);
02. Fit and turn the key CW, then pull the release handle (step 2 - **fig. 14**);
03. You can now move the gate by hand to the desired position (steps 3 and 4 - **fig. 14**).

## 4 ELECTRICAL CONNECTIONS

**CAUTION!** – All electrical connections must be made while disconnected from the grid and disconnected from the backup battery (if any).

01. Insert all the connecting cables to the various devices, leaving them 20 to 30 cm longer than necessary. Refer to Table 5 for the cable type and Figure 17 for connections.
02. Use a clamp to hold together all the cables that enter the gearmotor, and place the clamp underneath the hole through which the cables enter.
03. Connect up the power cable to the terminal provided, as shown in Figure 15, then use a clamp to lock the cable onto the first cable ring.
04. Connect up the other cables according to the diagram in Figure 16. For greater convenience, the terminal clamps are removable.
05. After making the connections, lock the cables you have collected together in place using the rings provided (**fig. 16**), and anchor the excess part of the aerial cable to the other cables.

### 4.1 - Description of the electrical connections

- **FLASH** = output for one or two “LUCYB” or similar type flashers with single 12V maximum 21W bulb.
- **S.C.A.** = “Open Gate Light” output; a 24V (max. 4W) signal light can be connected. It can also be programmed for other functions; see paragraph “7.5 Level two functions”.
- **BLUEBUS** = compatible devices can be connected up to this terminal. They are connected in parallel using two conductors only, through which both the electricity supply and the communication signals travel. For more useful information about BlueBus see also paragraph “8.1.1 BlueBus”.
- **STOP** = input for the devices which block or that may stop a manoeuvre in progress. Contacts like “Normally Closed”, “Normally Open” or constant resistance devices can be connected up using special procedures on the input. For more useful information about STOP see also Paragraph “8.1.2 STOP input”.
- **STEP-BY-STEP** = input for devices which control Step-by-Step movement. It is possible to connect contacts of the “Normally Open” type to this input.
- **OPEN** = input for devices which control only the opening movement. It is possible to connect contacts of the “Normally Open” type to this input.

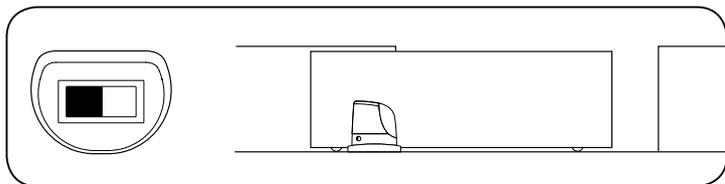
- **CLOSE** = input for devices which control only the closing movement. It is possible to connect contacts of the "Normally Open" type to this input.
- **AERIAL** = connection input for the radio receiver aerial (the aerial is incorporated in LUCY B).

## 5 FINAL CHECKS AND START UP

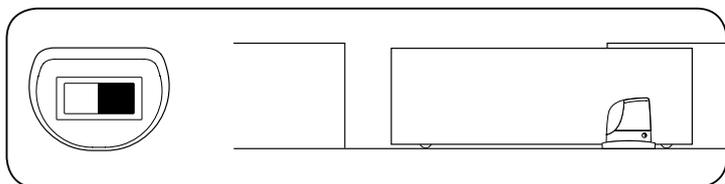
The manufacturers recommend you position the gate at approximately half travel before starting the checking and start up phase of the automation. This will ensure the gate is free to move both during opening and closure.

### 5.1 - Selecting the direction

The direction of the opening manoeuvre must be chosen depending on the position of the gearmotor with respect to the gate. If the gate must move left for opening, the selector must be moved towards left as shown in the Figure,



alternatively, if the gate has to move right during opening, the selector must be moved towards the right as shown in the Figure.



### 5.2 - Connecting to the power supply

**CAUTION!** – Connecting RUN to the power supply must only be performed by qualified and experienced personnel in possession of the necessary requisites and in full respect of the laws, provisions and standards currently in force.

As soon as RUN is powered up, you should check the following:

01. Check that the BlueBus led flashes regularly at the frequency of one flash per second.
02. Make sure that the leds on the photocells flash (both on TX and RX); the type of flashing is not important as it depends on other factors.
03. Make sure that the flasher connected to the FLASH output and the indicator light connected to the "Open Gate Indicator" output are off.

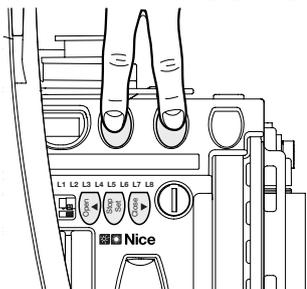
If the above conditions are not satisfied, you should immediately switch off the power supply to the control unit and check the electrical connections more carefully.

Please refer to the chapter on "Troubleshooting" for further information about finding and analysing failures.

### 5.3 - Recognition of the devices

After connecting up the power supply, the control unit must be made to recognise the devices connected up to the BLUEBUS and STOP inputs. Before this phase, leds L1 and L2 will flash to indicate that recognition of the devices must be carried out.

01. Press and hold keys **[▲]** and **[Set]**.



02. Release the keys when leds L1 and L2 start to flash quickly (after around 3s).
03. Wait a few seconds until the control unit has completed the device recognition procedure.
04. When the recognition stage is completed the STOP led must remain on, while the L1 and L2 leds must go off (leds L3 and L4 may start flashing).

### Device recognition, mode 2

This configures:

- The BlueBus output with 12V auxiliary output; it may be used as a power output for 12V electronic devices up to 6W;
- **CAUTION - if you run mode 2 device recognition, you can no longer use the BlueBus photocells.**
- Using the OPEN and CLOSE terminals as photocell and photocell 2 safety inputs respectively (for this function, refer to table 10 and fig. 18).

This mode is selected during device recognition, by holding down the **[Open]** and **[Stop]** buttons for more than 8 seconds.

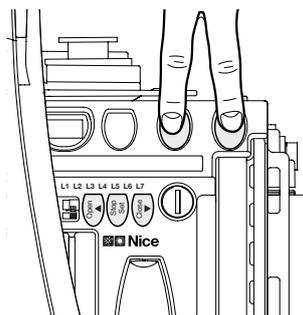
After 8 seconds, leds L1 and L2 start flashing very quickly; release the **[Open]** and **[Stop]** buttons.

The connected devices recognition stage can be repeated at any time, even after the installation (for example, if a device is installed); for performing the new recognition see paragraph "8.1.6 Recognition of Other Devices".

### 5.4 - Recognition of the length of the gate

After recognizing the devices, L3 and L4 leds start flashing; the control unit must recognize the length of the gate. During this stage, the length of the gate is measured from the closing limit switch to the opening limit switch. This measurement is required to calculate the deceleration points and the partial opening point.

01. Press and hold the **[Set]** and **[▼]** keys



02. Release the keys when the manoeuvre starts (after approx. 3 s).
03. Check the manoeuvre in progress is an opening manoeuvre. If it is not, press the **[Stop]** key and carefully check paragraph "5.1 Selecting the direction"; then repeat the process from point 1.
04. Wait for the control unit to fully open the gate by reaching the opening limit switch; the closing manoeuvre will start immediately afterwards.
05. Wait for the control unit to fully close the gate.

### Gate length recognition, mode 2

This configures:

- Deceleration at the 10 cm position in opening and closing;
- 100% motor speed setup for opening and closing (extremely fast mode, see table 8).

This mode is enabled during device recognition by holding down the **[Stop]** and **[Close]** keys for more than 8 seconds. Leds L3 and L4 now start flashing very quickly, at which point you can release the **[Stop]** and **[Close]** keys.

If the above conditions are not satisfied, you should immediately switch off the power supply to the control unit and check the electrical connections more carefully. Other useful information can be found in the chapter on "Troubleshooting".

### 5.5 - Checking gate movements

On completion of the recognition of the length of the gate, it is advisable to carry out a number of manoeuvres in order to check the gate travels properly.

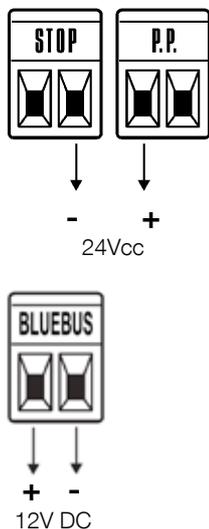
01. Press the **[Open]** key to open the gate. Check that gate opening occurs correctly, without any variations in speed. The gate must only slow down when it is between 70 and 50 cm from the opening limit switch, and stop, as a result of the limit switch, at 2-3 cm from the mechanical opening stop.
02. Press the **[Close]** key to close the gate. Check that gate opening occurs correctly, without any variations in speed. The gate must only slow down when it is between 70 and 50 cm from the closing limit switch, and stop, as a result of the limit switch, at 2-3 cm from the mechanical closing stop.
03. During the manoeuvre, check that the flasher flashes at a speed of 0.5 seconds on and 0.5 seconds off. If present, also check the flashes of the light connected to the S.C.A. terminal: slow flashes during opening, quick flashes during closing.
04. 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.
05. Check that the fastening of the RUN gearmotor, the rack and the limit switch brackets are solid, stable and suitably resistant, also when the gate accelerates or decelerates sharply.

## 5.6 - Connecting other devices

If the user needs to feed external devices such as a proximity reader for transponder cards or the illumination light of the key-operated selector switch, it is possible to tap power as shown in Figure. The power supply voltage is 24V DC -30% to +50% with a maximum available current of 100mA.

If you have to power external devices at 12V, you can draw the power from the BlueBus terminal once type 2 programming has been set on the programmer.

**CAUTION!** – Type 2 device programming disables the controller's compatibility with the BlueBus system.



## 6 TESTING AND COMMISSIONING

This is the most important stage in the automation system installation procedure in order to ensure the maximum safety levels. Testing can also be adopted as a method of periodically checking that all the various devices in the system are functioning correctly.

**CAUTION!** – Testing of the entire system must be performed by qualified and experienced personnel who must establish which tests to conduct on the basis of the risks involved, and verify the compliance of the system with applicable regulations, legislation and standards, in particular with all the provisions of EN standard 12445 which establishes the test methods for automation systems for gates.

### 6.1 - Testing

Each component of the system, e.g. safety edges, photocells, emergency stop, etc. requires a specific testing phase. We therefore recommend observing the procedures shown in the relative instruction manuals. To test RUN, proceed as follows:

01. Ensure that the instructions outlined in this manual and in particular in chapter 1 "WARNINGS" have been observed in full.
02. Release the gearmotor as indicated in par. 3.6 - Manually releasing and locking the gearmotor.
03. Make sure you can move the door manually both during opening and closing with a force of max. 390N (40 kg approx.).
04. Lock the gearmotor.
05. Using the control or stop devices (key-operated selector switch, control buttons or radio transmitter) test the opening, closing and stopping of the gate and make sure that the gates move in the intended direction.
06. Check the proper operation of all the safety devices, one by one (photocells, sensitive edges, emergency stop, etc.) and check that the gate performs as it should. In particular, each time a device is activated the "BlueBus" led on the control unit flashes 2 times quickly, confirming that the control unit recognizes the event.
07. If the dangerous situations caused by the movement of the gate have been safeguarded by limiting the impact force, the user must measure the impact force according to the EN 12445 standard. If the adjustment of the "speed" and control of the "motor force" are used to assist the system in the reduction of the impact force, try to find the adjustment that gives the best results.

### 6.2 - Commissioning

Commissioning can take place only after all the testing phases of the RUN and the other devices have been terminated successfully. It is not permissible to execute partial commissioning or to enable use of the system in makeshift conditions.

01. Prepare and store the technical documentation for the automation for at least 10 years. This must include at least: an assembly drawing of the automation, a wiring diagram, an analysis of hazards and solutions adopted, a manufacturer's declaration of conformity of all the devices installed (for RUN use the annexed CE declaration of conformity); a copy of the automation system instruction manual and maintenance schedule.
02. Post a label on the door providing at least the following data: type of automation, name and address of manufacturer (person responsible for the "commissioning"), serial number, year of manufacture and CE mark.
03. Post a permanent label or sign near the gate detailing the operations for the release and manual manoeuvre.
04. Prepare the declaration of conformity of the automation system and deliver it to the owner.
05. Prepare the "Installation instructions and warnings" of the automation system and deliver it to the owner.

06. Prepare the maintenance schedule of the automation system and deliver it to the owner; it must provide all instructions regarding the maintenance of the single automation devices.
07. Before commissioning the automation system, inform the owner in writing regarding dangers and hazards that still exist (e.g. in the "Installation instructions and warnings").

## PRODUCT MAINTENANCE

The automation must be subjected to maintenance work on a regular basis, in order to guarantee it lasts; to this end RUN has a manoeuvre counter and maintenance warning system; see paragraph "8.2.3 Maintenance warning".

**CAUTION!** – The maintenance operations must be performed in strict compliance with the safety directions provided in this manual and according to applicable legislation and standards.

If other devices are present, follow the directions provided in the corresponding maintenance schedule.

01. RUN requires scheduled maintenance work within at least within 6 months or 20,000 manoeuvres (max.) from the previous maintenance.
02. Disconnect all power supplies (including any backup batteries).
03. Check for any deterioration in automation system components, paying special attention to erosion or oxidation of the structural parts. Replace any parts which are below the required standard.
04. Check the wear and tear on the moving parts: pinion, rack and the gate components; if necessary replace them.
05. Connect the electric power sources up again, and carry out all the tests and checks described in section 6.1 ("Testing").

## DISPOSAL OF THE PRODUCT

**This product is an integral part of the automation system it controls and must be disposed of along with it.**

As with installation operations, disposal operations must be performed by qualified personnel at the end of the product's useful life.

This product is made of various types of materials, some of which can be recycled while others must be scrapped. Seek information on the recycling and disposal systems required by local regulations in your area for this product category.

**Caution!** – some parts of the product may contain polluting or hazardous substances which, if released into the environment, may cause serious damage to the environment or to human health.

As indicated by the symbol on the side, disposal of this product as domestic waste is strictly prohibited. Separate waste into categories for disposal, according to the methods established by local regulations, or return the product to the retailer when purchasing a new version.

**Caution!** – Local legislation may envisage serious fines in the event of abusive disposal of this product.



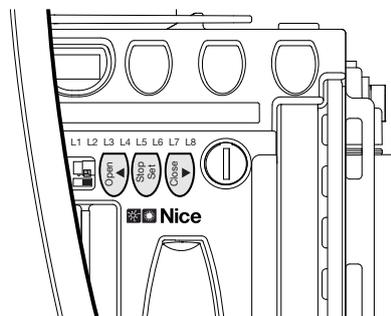
## 7.1 - Preset functions

The RUN control unit has a number of programmable functions. These functions are set to a configuration which should satisfy most automations.

## 7.2 - Programming keys

The RUN control unit features three keys that can be used to command the control unit both during tests and programming.

<b>Open</b> ▲	The "OPEN" key enables the user to control the openings of the gate or move the programming point upwards
<b>Stop Set</b>	The "STOP" key enables the user to stop the manoeuvre, or when pressed for 5 seconds enables access to programming mode
<b>Close</b> ▼	The "CLOSE" key enables the user to close the door or scroll down through the programming steps



## 7.3 - Programming

On the RUN control unit, a number of programmable functions are available. The functions are adjusted using 3 keys on the control unit: [▲] [Set] [▼] and are displayed by 8 leds: **L1....L8**.

The programmable functions available on RUN are set out on 2 levels:

**Level one:** the functions can be adjusted in ON-OFF (active or inactive) modes. In this case, each of the leds **L1....L8** indicates one function; if it is lit the function is active, if it is OFF, the function is not active; see Table 6.

**Level two:** the parameters can be adjusted on a scale of values (from 1 to 8). In this case, each of the leds **L1....L8** indicates the set value (there are 8 possible settings). Please refer to Table 8.

**TABLE 6 - Programmable functions: level 1**

Led	Function	Description
<b>L1</b>	<b>Automatic closure</b>	This function causes the door to close automatically after the programmed time has lapsed. The factory set Pause Time is 30 seconds, but can be changed to 5, 15, 30, 45, 60, 80, 120 or 180 seconds. If the function is inactive, functioning will be "semi-automatic".
<b>L2</b>	<b>Close After Photo</b>	This function enables the gate to be kept open for the necessary transit time only. In fact the "Photo" always causes an automatic closure with a pause time of 5s (regardless of the programmed value). The action changes depending on whether the "Automatic closing" function is active or not. When <b>Automatic Closing</b> is inactive: The gate always arrives to the totally open position (even if the Photo disengages first). On release of Photo, automatic closure is activated with a pause of 5s. When <b>AUTOMATIC CLOSING</b> is active: the opening manoeuvre stops immediately after the photocells have disengaged. After 5 seconds, the gate will begin to close automatically. The "Close after photo" function is always disabled in manoeuvres interrupted by a Stop command. If the "Close after photo" function is inactive the pause time is that which has been programmed or there is no automatic closing if the function is inactive.
<b>L3</b>	<b>Always Close</b>	The "Always Close" function will trigger, and the gate will close if an open gate is detected when the power supply returns. For safety reasons, the manoeuvre is preceded by 5s of flashing. If the function is inactive when the power supply returns, the gate will remain still.
<b>L4</b>	<b>Stand-By</b>	This function enables the user to lower consumption to a very minimum. It is particularly useful in cases when the buffer battery is being used. If this function is active, the control unit will switch the BLUEBUS output (and consequently the devices) and all the LEDs off one minute after the end of the manoeuvre. The only LED which will remain on is the BLUEBUS LED which will simply flash more slowly. When a command arrives, the control unit will reset to complete functioning. If this function is inactive, there will be no reduction in the consumption.
<b>L5</b>	<b>Peak</b>	If this function is activated, the gradual acceleration at the beginning of each manoeuvre will be disconnected. It enables the peak thrust 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.
<b>L6</b>	<b>Pre-flashing</b>	With the pre-flashing function, a 3 second pause is added between the flasher switching on and the beginning 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.
<b>L7</b>	<b>"Close" becomes "Open partially"</b>	When this option is selected, all Close commands (CLOSE input or wireless control) actuate Partial Open (see led L6, table 8).
<b>L8</b>	<b>"Slave" mode</b>	With this option, ROBUS becomes a Slave: this allows you to synchronise two motors on opposing panels with one as Master and one as Slave; for further information, see par. 8.1.5 RUN "Slave" mode.

During normal operation, leds **L1....L8** are on/off in relation to the status of the respective function; for instance, **L1** is on when "Automatic Closing" is active.

## 7.4 - Level one programming (ON-OFF functions)

By default, level 1 functions are all set to OFF, but can be modified at any time as described in Table 6. Take care during modification procedures, as there is a maximum time interval of 10 seconds between pressing one key and another; otherwise the system exits the procedure automatically memorising the changes made up to that time.

**TABLE 7**

**Changing ON-OFF functions**

<b>01.</b>	Press and hold the "Set" key for about 3 seconds;
<b>02.</b>	Release "Set" when led <b>L1</b> starts flashing;
<b>03.</b>	Press "▲" or "▼" to move the flashing led to the function you wish to modify;
<b>04.</b>	Press "Set" to change the function's status: (short flashing = OFF; long flashing = ON);
<b>05.</b>	Wait 10 seconds (max.) to leave programming.

Note – Points 3 and 4 can be repeated during the same programming phases in order to set other functions to ON or OFF.

## 7.5 - Level 2 programming (adjustable parameters)

The adjustable parameters are factory set as shown in the Table 8 with: " " but can be modified at any time as shown in Table 9. Take care during modification procedures, as there is a maximum time interval of 10 seconds between pressing one key and another; otherwise the system exits the procedure automatically memorising the changes made up to that time.

TABLE 8 - Level two functions (adjustable parameters)				
Entrance led	Parameter	Led (level)	Value	Description
L1	Pause Time	L1	5 seconds	Adjusts the pause time, namely the time which lapses before automatic closure. Is effective only if automatic closure is enabled.
		L2	15 seconds	
		L3	30 seconds	
		L4	45 seconds	
		L5	60 seconds	
		L6	80 seconds	
		L7	120 seconds	
		L8	180 seconds	
L2	Step-by-step	L1	Open - stop - close - stop	Manages the sequence of controls associated to the Step-by-Step input or to the 1st radio command.
		L2	Open - Stop - Close - Open	
		L3	Open - close - open - close	
		L4	Apartment block	
		L5	Apartment block 2 (more than 2" generates stop)	
		L6	Step-by-Step 2 (less than 2" causes partial opening)	
		L7	Hold-to-run	
		L8	"Semi-automatic" opening, "hold-to-run" closing	
L3	Motor speed	L1	Very slow	Sets the motor speed during normal travel.
		L2	Slow	
		L3	Medium	
		L4	Fast	
		L5	Very fast	
		L6	Extremely Fast	
		L7	Opens "Fast"; closes "slow"	
		L8	Opens "Extremely Fast" Closes "Fast"	
L4	Open Gate Indicator Output	L1	Open Gate Indicator Function	Adjusts the function associated with S.C.A. output. (whatever the associated function may be, the output supplies a voltage of 24V -30 +50% with a maximum power of 4W when active).
		L2	On if gate closed	
		L3	On if gate open	
		L4	Active with 2nd radio output	
		L5	Active with 3rd radio output	
		L6	Active with 4th radio output	
		L7	Maintenance indicator	
		L8	Electric lock	
L5	Motor Force	L1	Super light gate	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	"Average heavy" gate	
		L6	"Heavy" gate	
		L7	"Very heavy" gate	
		L8	"Super heavy" gate	
L6	Partial open	L1	0,5 mt	Adjusts the measurement of the partial opening. Partial opening can be controlled with the 2nd radio command or with "CLOSE", if the "Close" function is present, this becomes "Open partially".
		L2	1 mt	
		L3	1,5 mt	
		L4	2 mt	
		L5	2,5 mt	
		L6	3 mt	
		L7	3,4 mt	
		L8	4 mt	
L7	Maintenance warning	L1	Automatic (depending on the severity of the manoeuvre)	Controls the number of manoeuvres after which the automation maintenance notification signal is sent (see paragraph 8.2.3 Maintenance notification).
		L2	1000	
		L3	2000	
		L4	4000	
		L5	7000	
		L6	10000	
		L7	15000	
		L8	20000	

<b>L8</b>	<b>List of malfunctions</b>	<b>L1</b>	Result of 1 <sup>st</sup> manoeuvre (most recent)	The type of defect that has occurred in the last 8 manoeuvres can be established (see paragraph 7.6.1 Malfunctions log).
		<b>L2</b>	Result of 2 <sup>nd</sup> manoeuvre	
		<b>L3</b>	Result of 3 <sup>rd</sup> manoeuvre	
		<b>L4</b>	Result of 4 <sup>nd</sup> manoeuvre	
		<b>L5</b>	Result of 5 <sup>nd</sup> manoeuvre	
		<b>L6</b>	Result of 6 <sup>nd</sup> manoeuvre	
		<b>L7</b>	Result of 7 <sup>nd</sup> manoeuvre	
		<b>L8</b>	Result of 8 <sup>nd</sup> manoeuvre	

N.B.:

- The grey fields are factory settings.
- All the parameters can be adjusted as required without any contraindication; only the adjustment of the "motor force" could require special care:
  - Do not use high force values to compensate for points of abnormal friction on the gate. Excessive force can compromise the operation of the safety system or damage the gate.
  - If the "Motor force control" is used in support of the system for impact force reduction, the force measurement procedure must be performed after each adjustment, as envisaged by standard EN 12445.
  - Wear and weather conditions may affect the movement of the gate, therefore periodic force readjustments may be necessary.

**TABLE 9**

**Level 2 programming (adjustable parameters)**

<b>01.</b>	Press and hold the "Set" key for about 3 seconds;
<b>02.</b>	Release "Set" when led <b>L1</b> starts flashing;
<b>03.</b>	Press "▲" or "▼" to move the flashing led to the function you wish to modify;
<b>04.</b>	Hold down "Set" until you have completed step 06.
<b>05.</b>	Wait approx. 3 seconds, after which the led representing the current level of the parameter which is to be modified will light up;
<b>06.</b>	Press "▲" or "▼" to move the led representing the parameter value;
<b>07.</b>	Release the "Set" key;
<b>08.</b>	Wait 10 seconds (max.) to leave programming.

Note – Points 3 to 7 can be repeated during the same programming phase in order to set other parameters.

## 8 FURTHER DETAILS

### 8.1 - Adding or removing devices

Devices can be added to or removed from the RUN automation system at any time. In particular, various device types can be connected to "BlueBus" and "STOP" input as explained in the following paragraphs.

**After you have added or removed any devices, the automation system must go through the recognition process again according to the directions contained in paragraph "8.1.6 Recognition of other devices".**

#### 8.1.1 - BlueBus

BlueBus technology allows you to connect compatible devices using only two wires which 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 recognized because a univocal address is assigned to it during the installation. Photocells, safety devices, control keys, signalling lights etc. can be connected to BlueBus. The RUN control unit recognizes all the connected devices individually through a suitable recognition process, and can detect all the possible abnormalities with absolute precision. For this reason, each time a device connected to BlueBus is added or removed the control unit must go through the recognition process; see paragraph 8.1.6 Recognition of Other Devices.

#### 8.1.2 - STOP input

STOP is the input that stops movement immediately, followed by a brief reverse of the manoeuvre. Devices with output featuring normally open "NO" contacts and devices with normally closed "NC" contacts, as well as devices with 8.2 kΩ constant resistance output, like sensitive edges, can be connected to this input.

During the recognition stage the control unit, like BlueBus, recognizes the type of device connected to the STOP input (see paragraph "8.1.6 Recognition of Other Devices"); subsequently it commands a STOP whenever a change occurs in the recognized status.

Multiple devices, even of different type, 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 constant resistance output can be connected in parallel; if needed, multiple devices must be connected "in cascade" with a single 8.2 kΩ.
- NO and NC combinations are possible by placing the 2 contacts in parallel, taking care to place a 8.2 kΩ resistance in parallel to the NC contact (thus enabling the combination of 3 devices: Normally Open, Normally Closed and 8.2 kΩ).

**IMPORTANT – If the STOP input is used to connect devices with safety functions, only the devices with 8.2 kΩ constant resistance output guarantee the failsafe category 3 according to EN standard 954-1.**

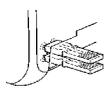
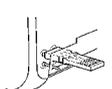
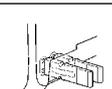
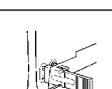
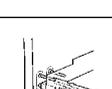
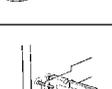
#### 8.1.3 - Photocells

By means of addressing using special jumpers, the "BlueBus" system enables the user to make the control unit recognise the photocells and assign them with a correct detection function. The addressing operation must be done both on TX and RX (setting the jumpers in the same way) making sure there are no other couples of photocells with the same address.

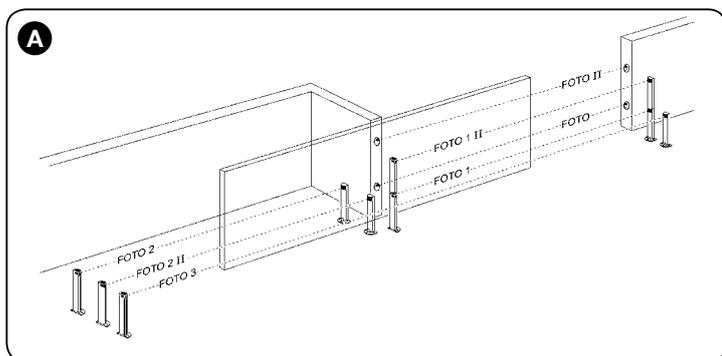
In an automation mechanism for sliding gates with RUN you may install photocells as shown in table 10 and fig. A.

Each time a photocell is added or removed the control unit must go through the recognition process; see paragraph "8.1.6 Recognition of Other Devices".

**TABLE 10 - PHOTOCCELL ADDRESSES**

Photocell		Jumper
<b>FOTO</b>	External photocell h = 50 activated when gate closes	
<b>FOTO II</b>	External photocell h = 100 activated when gate closes	
<b>FOTO 1</b>	Internal photocell h = 50 activated when gate closes	
<b>FOTO 1 II</b>	Internal photocell h = 100 activated when gate closes	
<b>FOTO 2</b>	External photocell activated when gate opens	
<b>FOTO 2 II</b>	Internal photocell activated when gate opens	

<b>FOTO 3</b>	Single photocell for the entire automation system	
<b>IMPORTANT</b> in the case of the installation of FOTO 3 and FOTO II together the position of the photocell elements (TX-RX) must comply with the provisions contained in the photocell instruction manual.		



### 8.1.4 - FT210B Photo-sensor

The FT210B photo-sensor unites in a single device a force limiting device (type C in accordance with the EN1245 standard) and a presence detector which detects the presence of obstacles on an optical axis between the TX transmitter and the RX receiver (type D in accordance with the EN12453 standard). The sensitive edge status signals on the FT210B photosensor are transmitted by means of the photocell beam, integrating the two systems in a single device. The transmitting part is positioned on the mobile gate and is powered by a battery thereby eliminating unsightly connection systems; the consumption of the battery is reduced by special circuits guaranteeing a duration of up to 15 years (see the estimation details in the product instructions).

By combining a FT210B device to a sensitive edge (TCB65 for example) the level of security of the “main edge”, required by the EN12453 standard for all “types of use” and “types of activation”, can be attained.

Photosensor FT210B combined with “resistive” sensitive edges (8.2 kOhm), is safe with single faults (class 3 per EN 954-1). It is equipped with a special anti-collision circuit to prevent interference with other detectors, even not synchronised, and enables the addition of other photocells; for example in the case of transit of heavy vehicles where a second photocell is normally positioned at 1 m from the ground.

See the FT210B instructions manual for further information concerning connection and addressing methods.

### 8.1.5 - RUN “Slave” mode

Properly programmed and connected, RUN can function in “Slave” mode; this type of function is used when 2 opposite gates need to be automated with the synchronised movement of the two gates. In this mode one RUN works as Master commanding the movement, while the second RUN acts as Slave, following the commands transmitted by the Master (all RUNs are factory set to operate as Masters).

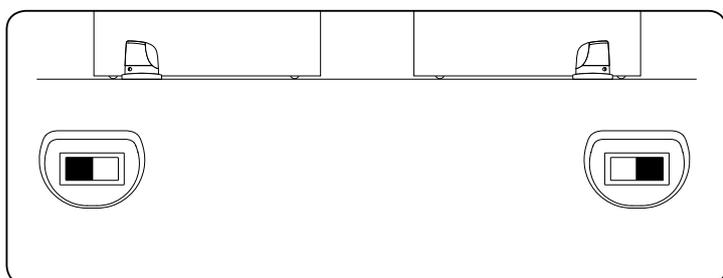
To configure RUN as a Slave, level one “Slave mode” must be activated (see table 6).

The connection between RUN Master and Slave is made via BlueBus.

**ATTENTION – In this case the polarity of the connections between the two RUNs must be respected as illustrated in fig. 18 (the other devices remain with no polarity).**

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

- Install the 2 motors as indicated in the Figure. It is not important which motor is to function as Slave or Master; when choosing, one must consider the convenience of the connections and the fact that the Step-by-Step command of the Slave only allows the Slave gate to be opened fully.
- Connect the 2 motors as shown in fig. 18.
- Select the opening direction of the 2 motors as shown in the figure (see also paragraph 5.1 Choosing the direction).



- Supply power to the 2 motors.
- Program “Slave Mode” on the Slave RUN (see Table 6).

- Run device recognition on the Slave RUN (see paragraph 8.1.6 Recognition of the devices).
- Run device recognition on the Master RUN (see paragraph 8.1.6 Recognition of the devices).
- Run gate length recognition on the Master RUN (see paragraph 5.4 Recognition length of the gate).

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

- All devices must be connected to the Master RUN (as in fig. 18) including the radio receiver.
- When using backup batteries, each motor must have its own battery.
- All programming of the Slave RUN is ignored (the Master RUN's programming overrides the others), except for that mentioned in table 11.

**TABLE 11 - Programming Slave RUNs independently of the Master RUN**

Level 1 functions (ON – OFF functions)	Level 2 functions (adjustable parameters)
Stand-by	Motor speed
Peak	Open Gate Indicator Output
Slave Mode	Motor force
	Error list

On Slave it is possible to connect:

- A flasher (Flash)
- An open gate light (S.C.A.)
- A sensitive edge (Stop)
- A command device (Step by Step) that controls the complete opening of the Slave gate only
- The Open and Close inputs are not used on the Slave

### 8.1.6 - Recognition of Other Devices

Normally the recognition of the devices connected to the BlueBus and the STOP input takes place during the installation stage. However, if new devices are added or old ones removed, the recognition process can be gone through again by proceeding as shown in Table 12.

**TABLE 12**

#### Recognition of Other Devices

01.	Press and hold down “▲” and “Set”;
02.	Release “Set” when led L1 starts flashing;
03.	Release the keys when the “L1” and “L2” leds start to flash quickly (after around 3s);
04.	At the end of the recognition the L1 and L2 leds will stop flashing, the STOP led must stay on, while the L1...L8 leds will come on based on the status of the ON-OFF functions they represent.

**IMPORTANT** – After you have added or removed any devices, the automation system must be tested again according to the directions contained in paragraph 6.1 “Testing”.

### 8.1.7 - Radio receiver

The “SM” radio receiver connector for SMXI or SMXIS type optional radio receivers has been provided in order to enable the user to control RUN from a distance.

For further information consult the radio receiver instructions manual. To insert the radio receiver, follow the operations indicated in Figure 20. In Table 13 there is a description of the association between the radio receiver output and the command that RUN will perform:

**TABLE 13 - Commands with SMXI, SMXIS receivers**

Output N°1	Step-by-step (STEP-BY-STEP)
Output N°2	Partial open
Output N°3	Open
Output N°4	Close

### 8.1.8 - Connecting up the Oview programmer

The unit has a BusT4 connector for connection of the Oview programming unit permitting complete, rapid management of installation, maintenance and diagnosis of the entire automation mechanism. To access the connector, proceed as shown in Fig. 21 and connect up the connector in the housing provided. The Oview may be connected to multiple units simultaneously (up to 16 with no particular precautions, up to 60 with the warnings stated) and may be left connected up to the unit during regular operation of the automation mechanism. In this case, it may be used to send commands directly to the unit using the “user” menu. You may also update Firmware. If the unit has a radio receiver in the OXI/OXIT family, you may use Oview to access the transmitter parameters

memorized in the receiver.

For more information refer to the instruction manual and the "Opera system book" manual.

### 8.1.9 - Connecting and installing the backup battery

**CAUTION! – Electrical connection of the battery to the unit must be performed exclusively after completing all stages in installation and programming, as the battery is an emergency power supply.**

On RUN400HS and RUN1200HS, you can install backup batteries via the PS524 charging interface, combined with the pair of batteries B12-B.4310 (12V - 7ah).

Proceed as shown in **fig. 22**:

- 01.** Fit charging card PS524 as shown in **step 1**
- 02.** Fit the batteries, already connected as shown in **steps 2 and 3**
- 03.** Connect the battery connector to the PS524 (**step 4**) and then hookup the connector cable to the control unit, as shown in **step 5**
- 04.** Route the cable between the control unit and charging card as shown in **step 6**.

**Note** - If necessary, the control unit and charging card may be removed by depressing the tabs (fig. 23).

## 8.2 - Special functions

### 8.2.1 - "Always open" function

The "Always open" function is a control unit feature which enables the user to control an opening manoeuvre when the "Step-by-Step" command lasts longer than 2 seconds. This is useful for connecting a timer contact to the "Step-by-Step" terminal in order to keep the gate open for a certain length of time, for example. This feature is valid with any kind of "Step-by-Step" input programming, except for "Close". Please refer to the "Step-by-Step Function" parameter in Table 8.

### 8.2.2 - "Move anyway" function

In the event that one of the safety devices is not functioning properly or is out of use, it is still possible to command and move the gate in "Man present" mode. Please refer to par. "Control with safety devices out of order" in the enclosure "Instructions and Warnings for users of the RUN gearmotor" for further information.

### 8.2.3 - Maintenance notification

With RUN, the user is warned when the automation requires a maintenance control. The number of manoeuvres after the warning can be selected from 8 levels, by means of the "Maintenance warning" adjustable parameter (see table 8). Adjustment level 1 is "automatic" and takes into consideration the severity of the manoeuvre, this being the force and duration of the manoeuvre, while the other adjustments are established based on the number of manoeuvres.

The maintenance request signal is given by means of the flasher (Flash) or by the light connected to the S.C.A. output when programmed as a "Maintenance light" (see table 8).

The flasher "Flash" and the maintenance light give the signals indicated in table 14, based on the number of manoeuvres performed in respect to the limits that have been programmed.

TABLE 14 - Maintenance warning with Flash and maintenance light		
Number of manoeuvres	Flash signal	Maintenance light signal
Lower than 80% of the limit	Normal (0.5s on, 0.5s off)	On for 2s when opening begins
Between 81% and 100% of the limit	Remains on for 2s at the beginning of the manoeuvre then carries on normally	Flashes throughout the manoeuvre
Over 100% of the limit	Remains ON for 2s at the start and end of	the manoeuvre then carries on normally

### 8.2.4 - Control of the number of manoeuvres performed

The number of manoeuvres performed as a percentage on the set limit can be verified by means of the "Maintenance warning" function. Follow the indications in Table 15 for this control.

TABLE 15	
Check of number of manoeuvres performed	
<b>01.</b>	Press and hold the "Set" key for about 3 seconds;
<b>02.</b>	Release "Set" when led L1 starts flashing;
<b>03.</b>	Press "▲" or "▼" key to move the flashing led onto L7, i.e. the "input led" for the parameter "Maintenance notification";
<b>04.</b>	Press and hold down "Set" throughout steps 5, 6 and 7;

<b>05.</b>	Wait approx. 3s after which the led associated with the current level of the parameter "Maintenance notification" will light up.
<b>06.</b>	Press and release "▲" and "▼";
<b>07.</b>	The led corresponding to the selected level flashes a few times. The number of flashes indicates the percentage of manoeuvres performed (in multiples of 10%) with respect to the set limit. For example: with the maintenance warning set on L6 being 10000, 10% is equal to 1000 manoeuvres; if the led flashes 4 times, this means that 40% of the manoeuvres have been reached (being between 4000 and 4999 manoeuvres). The led will not flash if 10% of the manoeuvres hasn't been reached.
<b>08.</b>	Release the "Set" key.

### 8.2.5 - Manoeuvre counter reset

After the maintenance of the system has been performed the manoeuvre counter must be reset. Follow the indications in Table 16 for this control.

TABLE 16	
Manoeuvre counter reset	
<b>01.</b>	Press and hold the "Set" key for about 3 seconds;
<b>02.</b>	Release "Set" when led L1 starts flashing;
<b>03.</b>	Press "▲" or "▼" key to move the flashing led onto L7, i.e. the "input led" for the parameter "Maintenance notification";
<b>04.</b>	Press and hold down "Set" throughout steps 5 and 6;
<b>05.</b>	Wait approx. 3s after which the led associated with the current level of the parameter "Maintenance notification" will light up.
<b>06.</b>	Press and hold keys "▲" and "▼" for at least 5 seconds, then release them. The led that corresponds to the selected level flashes rapidly indicating that the; manoeuvre counter has been reset;
<b>07.</b>	Release the "Set" key.

**9.1 - DIAGNOSTICS**

Some devices are display messages to identify their status and faults. The following paragraphs describe the messages available with the different types of device.

**9.2 - Troubleshooting**

Table 17 gives some troubleshooting procedures, for use during installation and in case of malfunctions.

TABLE 17		
Troubleshooting		
01.	The radio transmitter does not control the gate and the led on the transmitter does not light up	Check to see if the transmitter batteries are exhausted, if necessary replace them
02.	The radio transmitter does not control the gate but the led on the transmitter lights up	Check to see if the transmitter has been memorised correctly in the radio receiver
03.	No manoeuvre starts and the "BlueBus" led does not flash	Check that RUN is powered off the mains. Check to see if fuses F1, F2 or F3 are blown; if necessary, identify the reason for the failure and then replace the fuses with others having the same current rating and characteristics
04.	No manoeuvre starts and the flasher is off	Make sure that the command is actually received. If the command reaches the STEP-BY-STEP input, the corresponding "STEP-BY-STEP" led must light up; if you are using the radio transmitter, the "BlueBus" led must make two quick flashes.
05.	No manoeuvre starts and the flasher flashes a few times	Count the flashes and check the corresponding value in table 19
06.	The manoeuvre starts but it is immediately followed by a reverse run	The selected force could be too low for this type of gate. Check to see whether there are any obstacles; if necessary increase the force
07.	The manoeuvre is carried out but the flasher does not work	Make sure that there is voltage on the flasher's FLASH terminal during the manoeuvre (being intermittent, the voltage value is not important: approximately 10-30Vdc); if there is voltage, the problem is due to the lamp; in this case replace the lamp 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.
08.	The manoeuvre is carried out but the Open Gate Indicator does not work	Check the type of function programmed for the S.C.A. output (Table 8) When the light should be on, check there is voltage on the S.C.A. terminal (approximately 24Vdc). If there is voltage, then the problem will have been caused by the light, which will have to be replaced with one with the same characteristics. If there is no voltage, there may have been an overload on the S.C.A. output. Check that the cable has not short-circuited.

**9.3 - Malfunctions archive**

RUN 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 faults, proceed as for Table 18:

TABLE 18	
Malfunctions log	
01.	Press and hold the "Set" key for about 3 seconds;
02.	Release "Set" when led L1 starts flashing;
03.	Press key "▲" or "▼" to move the flashing led onto L8, i.e. the "input led" for the Malfunctions Log parameter;
04.	Press and hold down "Set" throughout steps 5 and 6;
05.	Wait approx. 3s after which the leds corresponding to the manoeuvres subject to faults will light up. Led L1 indicates the result of the last manoeuvre and L8 indicates the result of the 8th manoeuvre. If the led is on, this means that a defect occurred during that manoeuvre; if the led is off, this means that no defect occurred during that manoeuvre;
06.	Press keys "▲" and "▼" to select the required manoeuvre: the corresponding led flashes the same number of times as those made by the flasher after a defect (see table 19);
07.	Release the "Set" key.

**9.4 - Flasher signals**

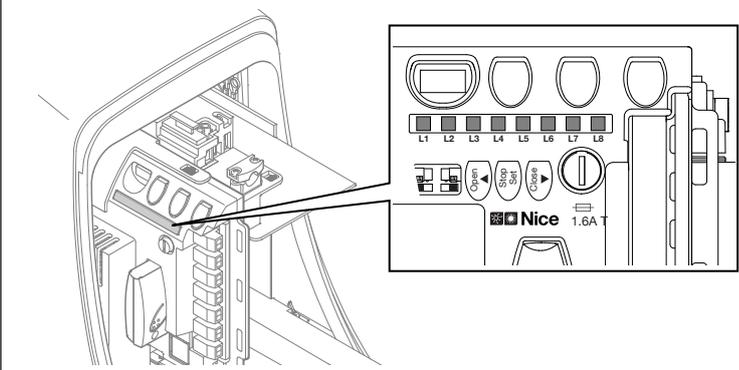
If you connect a flasher to the control unit's FLASH output (or a led flasher programmed to act as a flasher), it will flash once a second during manoeuvres. If any faults arise, the flasher will display warning signals which repeat twice with a 1 second pause between them. The same signals are displayed by the BlueBus led and the led flasher. Table 19 describes the causes and solutions for each signal.

TABLE 19		
Signal	Cause	Solution
1 flash 1 second pause 1 flash	BlueBus error	The BlueBus connected device check, run at the start of the manoeuvre, does not match the devices memorised during device recognition. Some faulty devices may be present; check and replace them as necessary.
2 flashes 1 second pause 2 flashes	Triggering of a photocell	At the start of the manoeuvre, one or more photocells fail to give the enable signal; check for obstacles and whether the photocells are interfering with each other's IR.

3 flashes 1 second pause 3 flashes	Activation of the "motor force" limiting device	During the movement, the gate experienced excessive friction; identify the cause.
4 flash 1 second pause 4 flash	Activation of the STOP input	At the starting of the manoeuvre or during the movement, the STOP input was activated; identify the cause
5 flash 1 second pause 5 flash	Error in the internal parameters of the electronic control unit	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 flash 1 second pause 6 flash	The maximum manoeuvre limit/hour has been exceeded	Wait for a few minutes until the manoeuvre limiting device drops to under the maximum limit
7 flash 1 second pause 7 flash	There is an error in the internal electric circuits	Disconnect all the power circuits for a few seconds and then try to give the command again. If the condition persists it means there is a serious malfunction and the electronic board has to be replaced
8 flash 1 second pause 8 flash	A command that does not permit other commands to be performed is already present.	Check the type of command that is always present; for example, it could be a command from a timer on the "open" input.

### 9.5 - Control unit signals

The leds on the control unit's terminals, connectors and keys, issue signals to indicate their normal/faulty operation. Table 20 describes the causes and solutions for each signal.

<b>TABLE 20</b> <b>Terminal leds on control unit</b>		
		
BlueBus led	Cause	Solution
Off	Malfunction	Check for presence of the power supply; check that the fuses are not blown; in this case, identify the cause of the fault and then replace with versions with the same specifications.
On	Serious malfunction	There is a serious malfunction; try switching off the control unit for a few seconds; if the condition persists, it means there is a malfunction and the circuit board has to be replaced.
1 flash per second	Everything OK	Normal control unit operation.
2 quick flashes	Status variation	This is normal when there is a change in one of the inputs: SS, STOP, OPEN, CLOSE, triggering of photocells or the radio transmitter is being used.
Series of flashes separated by a pause light	Miscellaneous	This is the same signal as on the flasher (see Table 19) 1 second pause
Led STOP	Cause	Solution
Off	Activation of the STOP input	Check the devices connected to the STOP input
On	Everything OK	STOP Input active.
SS led	Cause	Solution
Off	Everything OK	SS input not active
On	SS input activation	Normal if the device connected to the SS input is active
OPEN led	Cause	Solution
Off	Everything OK	OPEN input not active
On	OPEN input activation	Normal if the device connected to the OPEN input is active
CLOSE led	Cause	Solution
Off	Everything OK	CLOSE input not active
On	CLOSE input tripped	Normal if the device connected to the CLOSE input is active
STOP led	Cause	Solution
Off	STOP input	Check the devices connected to the STOP input
On	Everything OK	STOP Input active

**TABLE 21**  
**Programming leds on control unit**

<b>Led 1</b>	<b>Description</b>
Off	During normal operation the device indicates "Automatic Closing" is not active.
On	During normal operation the device indicates "Automatic Closing" is active.
It flashes	<ul style="list-style-type: none"> <li>• Function programming in progress.</li> <li>• If it flashes together with L2, it means that the user must carry out the device recognition phase (see par. 4.3).</li> </ul>
<b>Led 2</b>	<b>Description</b>
Off	During normal operation the device indicates "Close after photo" is not active.
On	During normal operation the device indicates "Close after photo" is active.
It flashes	<ul style="list-style-type: none"> <li>• Function programming in progress.</li> <li>• If it flashes together with L1, it means that the user must carry out the device recognition phase (see par. 5.3).</li> </ul>
<b>Led 3</b>	<b>Description</b>
Off	During normal operation the device indicates "Always close" is not active.
On	During normal operation the device indicates "Always close" is active.
It flashes	<ul style="list-style-type: none"> <li>• Function programming in progress.</li> <li>• If it flashes together with L4, it means that the user must carry out the gate length recognition phase (refer to Paragraph 5.4 Recognition length of the gate).</li> </ul>
<b>Led 4</b>	<b>Description</b>
Off	During normal operation the device indicates "Standby" is not active.
On	During normal operation the device indicates "Standby" is active.
It flashes	<ul style="list-style-type: none"> <li>• Function programming in progress.</li> <li>• If it flashes together with L3, it means that the user must carry out the gate length recognition phase (refer to Paragraph 5.4 Recognition length of the gate).</li> </ul>
<b>Led 5</b>	<b>Description</b>
Off	During normal operation the device indicates "Thrust" is active.
On	During normal operation the device indicates "Thrust" is active.
It flashes	Function programming in progress.
<b>Led 6</b>	<b>Description</b>
Off	During normal operation the device indicates "Preflashing" is not active.
On	During normal operation the device indicates "Preflashing" is active.
It flashes	Function programming in progress.
<b>Led 7</b>	<b>Description</b>
Off	During normal operation the device indicates that the CLOSE input activates a closing manoeuvre.
On	During normal operation the device indicates that the CLOSE input activates a partial closing manoeuvre.
It flashes	Function programming in progress.
<b>Led 8</b>	<b>Description</b>
Off	During normal operation the device indicates that RUN is configured as Master.
On	During normal operation the device indicates that RUN is configured as Slave.
It flashes	Function programming in progress.

## TECHNICAL SPECIFICATIONS OF PRODUCT

**WARNINGS:** • 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 products at any time when deemed necessary, maintaining the same intended use and functionality.

Model:	RUN400HS - RUN400HS/V1	RUN1200HS - RUN1200HS/V1
<b>Type</b>	Electromechanical gearmotor for automatic movement of sliding gates for industrial use complete with electronic control unit.	
<b>Pinion</b>	Number of teeth 18; Module 4 *	
<b>Maximum torque on start-up [corresponds to ability of generating the force required to move the leaf]</b>	12,3 Nm (340 N)	28,4 Nm (790 N)
<b>Nominal torque [corresponds to the ability of generating the force to maintain the leaf in movement]</b>	5,6 Nm (157 N)	8,2 Nm (320 N)
<b>Speed (no load)</b>	42 m/min	22 m/min
<b>Speed (at nominal torque)</b>	32 m/min	19 m/min
<b>Maximum frequency of operating cycles (at nominal torque)</b>	11 cycles/hour (264 cycles/day), for a gate of 15m (equal to a cycle of 63%), (the control unit limits cycles to the maximum number specified in tables 2 and 3)**	7-8 cycles/hour (365 cycles/day), for a gate of 15m (equal to a cycle of 63%), (the control unit limits cycles to the maximum number specified in tables 2 and 3)**
<b>Maximum time of continuous operation (at nominal torque)</b>	40 minutes (the control unit limits continuous operation to the maximum limits as specified in tables 2 and 3)***	60 minutes (the control unit limits continuous operation to the maximum limits as specified in tables 2 and 3)***
<b>Operating limits</b>	In general RUN is designed for the automation of gates with the weights and lengths as specified	
<b>Durability</b>	Estimated between 150.000 cycles and 450.000 cycles according to conditions specified in Table 4	
<b>Power: RUN 400HS - 1200HS Versione V1</b>	230V AC (+10% -15%) 50 Hz. 120Vac 50/60 Hz	
<b>Maximum power absorption on start-up [corresponding to Amps]</b>	510 W (4,7 A)	550 W (5,2 A)
<b>Insulation class</b>	1 (safety earthing required)	
<b>Flashing light output</b>	For 2 Flashing lights LUCYB (lamp 12V, 21W)	
<b>Gate open indicator output</b>	For 1 24V lamo of maximum 4W (output voltage may vary between -30 and +50% and can also control small relays)	
<b>BLUEBUS output</b>	One output with a maximum load of 15 BlueBus units	
<b>STOP input</b>	For normally closed or normally open contacts, for 8.2 kΩ constant resistance; with self-recognition (any variation from the memorized status causes the "STOP" command)	
<b>Step-by-step input</b>	For normally open contacts (contact closure generates S.S. command)	
<b>OPEN input</b>	For normally open contacts (contact closure generates OPEN command)	
<b>CLOSE input</b>	For normally open contacts (contact closure generates the CLOSE command)	
<b>Radio connector</b>	SM connector for receivers SMXI; SMXIS or ONEXI	
<b>Radio ANTENNA input</b>	Input ANTENNA Radio 52Ω for cable type RG58 or similar	
<b>Programmable functions</b>	8 ON-OFF type functions and 8 settable function (see tables 7 and 9)	
<b>Functions in self-learning mode</b>	Self-learning of devices connected to BlueBus output Self-learning of "STOP" device type (contact NO, NC or 8,2KΩ resistance) Self-learning of gate length and calculation of deceleration and partial opening points	
<b>Operating temperature</b>	-20°C ... 50°C	
<b>Protection rating</b>	IP 44	
<b>Dimensions and weight</b>	400 x 255 h 390 mm; 24.5kg	

\* 12 tooth modulus 6 pinion available as option.

\*\* At 50°C and with a gate of 15 metres, the maximum operating frequency is 7 cycles/hour (equal to a cycle of 40%).

\*\*\* At 50°C the maximum continuous operation time is 10 minutes.