

BIG METRO

CE

Swing gate opener



EN - Instructions and warnings for installation and use

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

FR - Instructions et avertissements pour l'installation et l'utilisation

ES - Instrucciones y advertencias para la instalación y el uso

DE - Installierungs-und Gebrauchsanleitungen und Hinweise

PL - Instrukcje i ostrzeżenia do instalacji i użytkowania

NL - Aanwijzingen en aanbevelingen voor installatie en gebruik

Nice

1 GENERAL SAFETY WARNINGS AND PRECAUTIONS

Recommendations regarding safety

- **ATTENTION!** – This manual contains important instructions and recommendations regarding the safety of persons. Incorrect installation can cause serious injury. Read the manual completely before starting work. If in doubt, suspend the installation and request clarifications from the Nice After-sales Assistance.
- **ATTENTION!** – Important instructions: keep this manual for any future maintenance interventions and product disposal.
- **ATTENTION!** – In compliance with the most recent European Legislation, the realisation of an automatic door or gate must respect the Standards envisioned by the 2006/42/CE Directive (ex 98/37/CE) (Machinery Directive) and in particular, the EN 12445; EN 12453; EN 12635 and EN 13241-1 Standards, which allow to declare conformity of the automation. **Considering this**, all product installation, connection, inspection and maintenance operations must only be performed by a qualified and skilled technician!

Recommendations for installation

- Before starting installation, check whether this product is suitable to automate your gate or door (see chapter 3 and the "Product technical features"). If it is not suitable, DO NOT proceed with installation.
- **All installation and maintenance operations must take place with the automation disconnected from the electric power input.** If the power input disconnection device is not visible from the place where the automation is positioned, before starting work, affix a sign onto the disconnection device that states "ATTENTION! MAINTENANCE IN PROGRESS".
- Handle the automation with care during installation, preventing crushing, blows, falls or contact with liquids of any nature. Do not place the product near to heat sources or expose it to naked flames. All of these actions can damage it and be cause of malfunctioning or dangerous situations. If this occurs, suspend installation immediately and contact the Nice After-sales Assistance.
- Do not modify any product parts. Unauthorised operations can only cause malfunctioning. The manufacturer declines liability for damage deriving from arbitrary modifications to the product.
- If the gate or door to be automated has a pedestrian door the plant must be set up with a control system that prevents functioning of the motor when the pedestrian door is open.
- The product packaging material must be disposed of in compliance with local legislation.

2 DESCRIPTION OF THE PRODUCT AND DESTINATION OF USE

This product is destined to be used to automate gates or doors with hinged panels.

ATTENTION! – Any use different to that described and in environmental conditions different to those stated in this manual must be considered improper and prohibited!

The product is an electro-mechanical gear motor, with a 24 Vdc motor. The gear motor is powered by the external control unit, to which it must be connected.

If the electric energy is interrupted (*black-out*), the gate panels can be moved by releasing the gear motor using the relevant wrench; to perform the manual manoeuvre, see chapter 8.

The product is available in the version

- BM5024 with encoder, suitable for MC824H control units.

Do not use gear motors with incompatible control units.

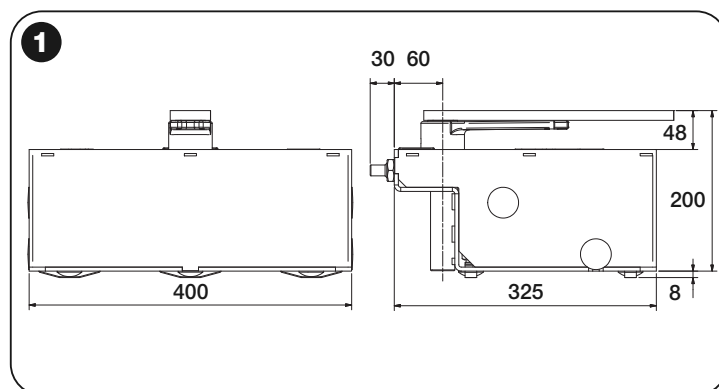
3.1 - Preliminary checks on installation

Before performing installation, check the integrity of the product components, the adequacy of the model chosen and the suitability of the environment destined for installation.

IMPORTANT – The gear motor cannot automate a manual gate that does not have an efficient and safe mechanical structure. Moreover, it cannot solve defects caused by incorrect installation or bad maintenance of the gate itself.

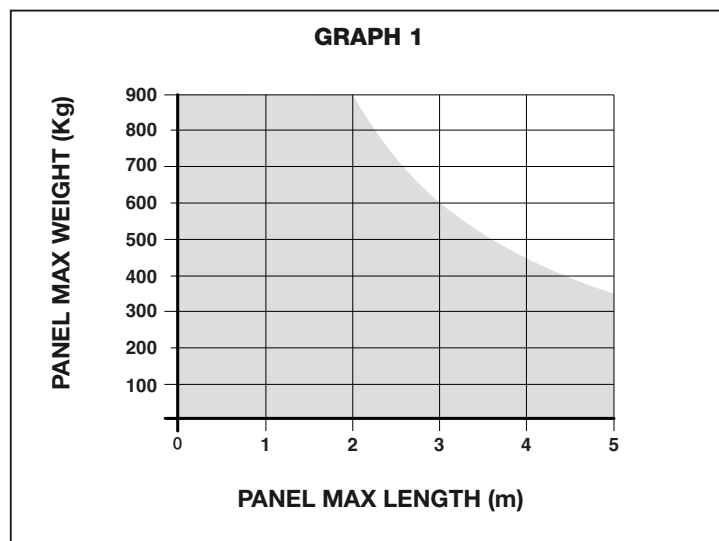
3.2 - Suitability of the gate to automate and the surrounding environment

- Check that the gate mechanical structure is suitable to be automated and complies with the Standards in force on the territory (*if necessary, refer to the data given on the gate label*).
- Moving the gate panel manually in *Opening* and in *Closure*, check that the movement takes place with the same and constant friction in all points of the run (*there must not be moments of greater effort*).
- Check that the gate panel stays in equilibrium, i.e. that it does not move if taken manually into any position and left.
- Check that the space around the gear motor allows to manually release the gate panels easily and safely.
- Envision end run retainers on the ground both for opening and closure of the gate.
- Check that the gear motor fixing area is compatible with the clearance of the latter (**fig. 1**).



3.3 - Limits of use for the product

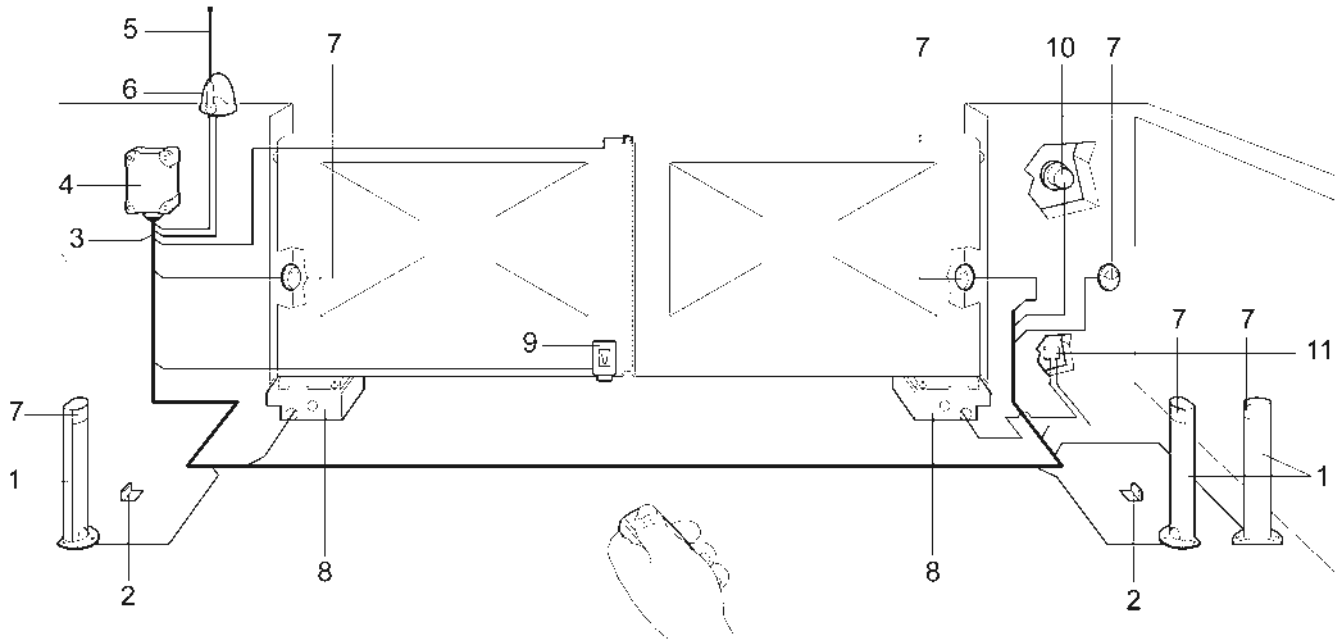
Before installing the product, check that the gate panel has dimensions and weight that lie within the limits given in **graph 1**; also evaluate the climatic conditions (e.g. strong wind) present in the place of installation. They can greatly reduce the values given in the graph.



3.4 - Set-up for installation

Fig. 2 shows an example of automated plant realised with Nice components. These components are positioned according to the typical and usual layout. With reference to **fig. 2**, establish the approximate position where each component envisioned in the plant will be installed and the most appropriate connection layout.

2



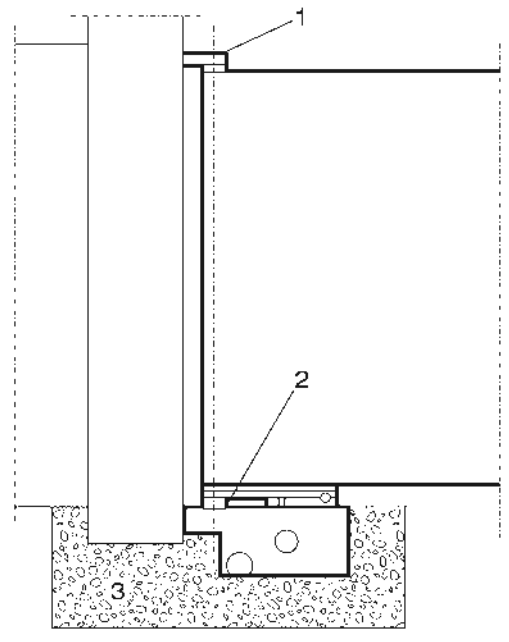
- | | | |
|------------------------------------|-------------------------------|---|
| 1 Photocell post | 5 Aerial | 9 Vertical electric lock |
| 2 Pair of opening stops | 6 Flashing light | 10 Key-operated selector switch or digital keypad |
| 3 230V line | 7 Photocell | 11 Connector block (not supplied) |
| 4 Control panel (electrical panel) | 8 Box with BIG METRO actuator | |

3.5 - Mounting: Overall Dimensions and Positioning of Foundation Box

- 1 Dig a generously sized foundation pit to house the foundation box (fig. 3); prepare a drain pipeline for draining off water and avoid the build-up of water.
- 2 If the gate is equipped with its own mechanical stops (fig. 2) skip directly to point 3. Otherwise secure the opening limiter accessory to the box (see paragraph 4).
- 3 Place the box inside the foundation hole; the stud must be aligned with the axis of the hinge (fig. 3).

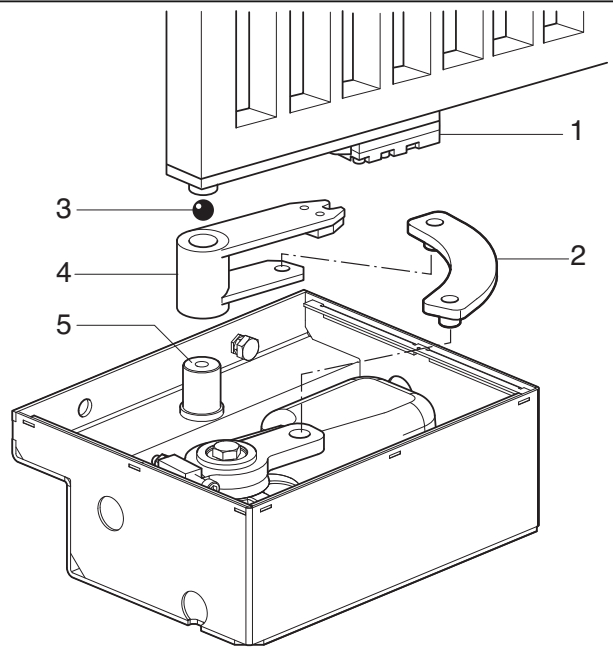
- 4 Provide a duct for the electrical cables and a drainage pipe.
- 5 Bury the foundation box in concrete, making sure it is set level.
- 6 Mount the control bracket on the box's stud along with the ball (fig. 4).
- 7 Set the gate leaf on the release lever and weld them securely.
- 8 Grease using a suitable grease nozzle.

3



1- Hinge 2- Pin 3- Concrete

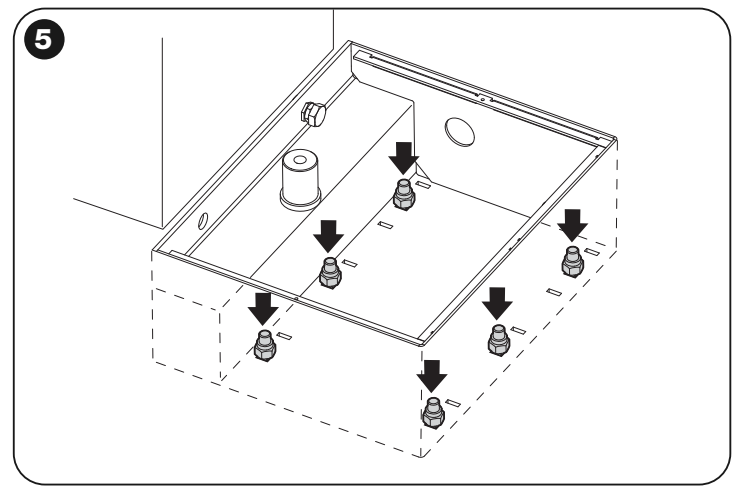
4



Release lever 4 Control bracket
 2 Connecting lever 5 Pin
 3 Ball

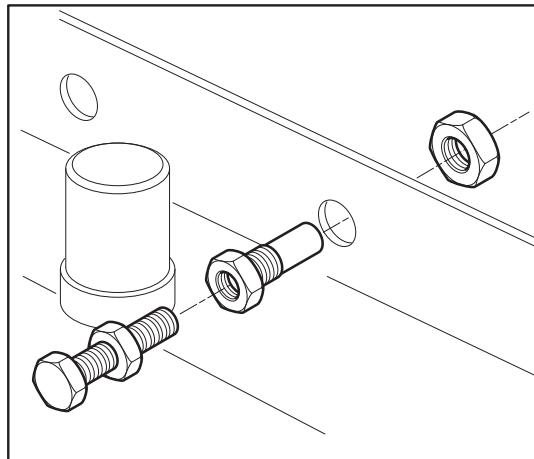
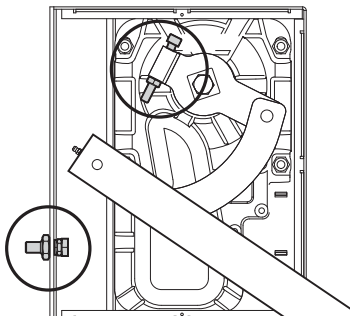
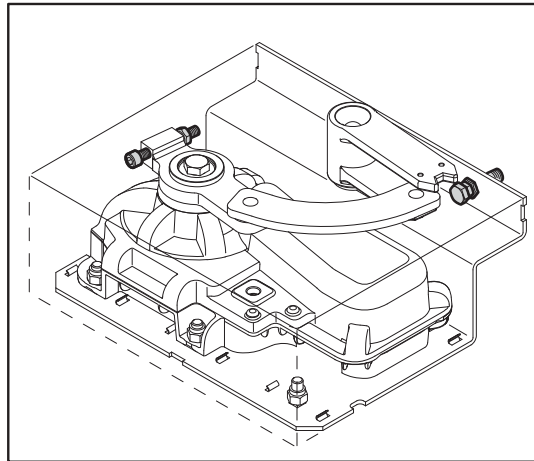
3.6 - Installation of BIG METRO Gearmotor

- 1 Remove the nuts and washers shown in the figure on the right (fig. 5).
- 2 Place the gearmotor inside the foundation box making sure it faces the correct direction.
- 3 Secure the gearmotor with the previously removed washers and nuts.
- 4 Connect the gearmotor to the gate by means of the connecting lever (2) (fig. 4).

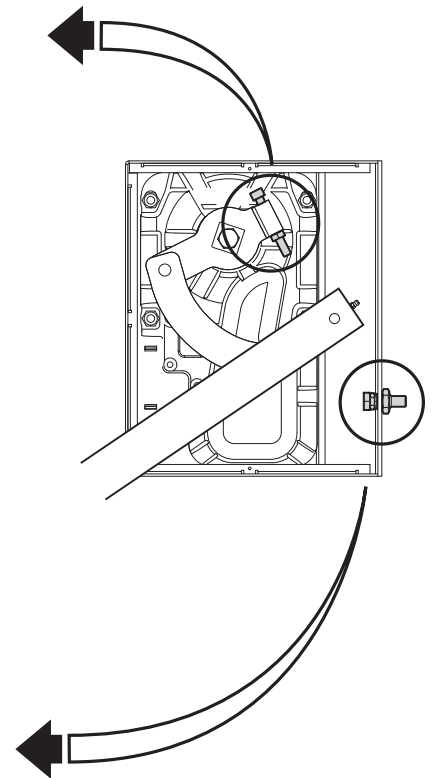


4 POSITION OF LIMIT SWITCHES

Closing limit switch (supplied with the motor) mount as shown in the figure



Opening limit switch (supplied with the motor) mount as shown in the figure



5 ELECTRIC CONNECTIONS

Recommendations:

- The gear motor is supplied with an electric power input cable measuring 2 m. Therefore, if a greater distance must be covered to perform the electric connections, a diversion box must be used (not supplied). **IMPORTANT! – It is prohibited to join the electric cable inside the foundation case.**
- Make the electric connections with the mains power input disconnected.

To connect the power input cable to the control unit, see the manual regarding the latter and the following indications:

Blu wire	= 24 V motor power input
Brown wire	= 24 V motor power input
Black wire	= Encoder
Grey wire	= Encoder
Yellow/Green wire	= Earth

6 INSPECTION AND COMMISSIONING

Testing of the entire system must be conducted by experienced and qualified personnel, who must establish what tests are necessary depending on the risks involved. To test BIG METRO proceed as follows:

- close the gate;
- disconnect the power supply to the control unit;
- release the gearmotor from the gate leaf as shown in paragraph “Manual release device (Key and Lever-Operated Release)” in Chapter “Instructions and Warnings for Users of the BIG METRO Gearmotor”;
- open the gate manually all the way;
- make sure the gate opens and closes smoothly without any points of friction;
- make sure that the gate, when stopped in any position and released, does not display a tendency to start moving again;
- make sure that the safety systems and mechanical stops are in good working order;
- make sure that the screw connections are properly tightened;
- clean the inside of the box and make sure that the drain operates properly;
- when all the checks have been completed, re-connect the gearmotor and power the control unit;
- BIG METRO is not equipped with any torque adjustment device, therefore this operation is performed by the control unit;
- measure the impact force as provided by the EN12453 and EN12445 standards.

7 PRODUCT MAINTENANCE

BIG METRO does not require any special maintenance; however, routine checks conducted every six months at least will ensure the long life of the gearmotor as well as the correct and safe operation of the system.

Maintenance consists simply in repeating the testing procedure.

DISPOSAL OF THE PRODUCT

This product is an integral part of the automation system, and should therefore be disposed of together with it.



As for the installation operations, even at the end of this product's life span, the dismantling operations must be carried out by qualified experts.

This product is made up of various types of materials: some can be recycled while others need to be disposed of. Find out about the recycling or disposal systems envisaged by your local regulations for this product category.

Important! – Parts of the product could contain pollutants or hazardous substances which, if released into the environment, could cause harmful effects to the environment itself as well as to human health.

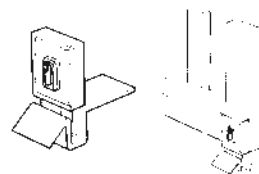
As indicated by the symbol opposite, throwing away this product as domestic

waste is strictly forbidden. So dispose of it as differentiated waste, in accordance with your local regulations, or return the product to the retailer when you purchase a new equivalent product.

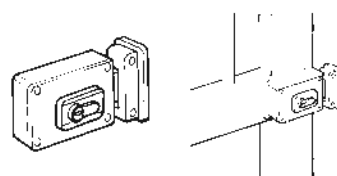
Important! – the local applicable regulations may envisage heavy sanctions in the event of illegal disposal of this product.

8 ACCESSORIES ON REQUEST

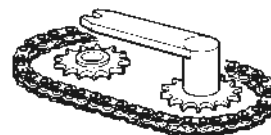
PLA10 Vertical electric lock 12 Vac



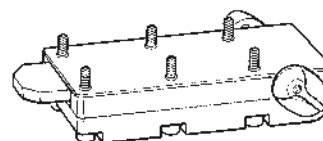
PLA11 Horizontal electric lock 12 Vac



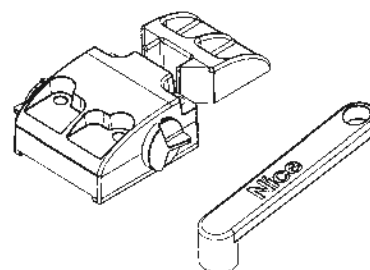
BMA1 360° opening device



MEA2 Key-operated release mechanism



MEA2 Key-operated release mechanism



9 MANUALLY RELEASING THE GEARMOTOR

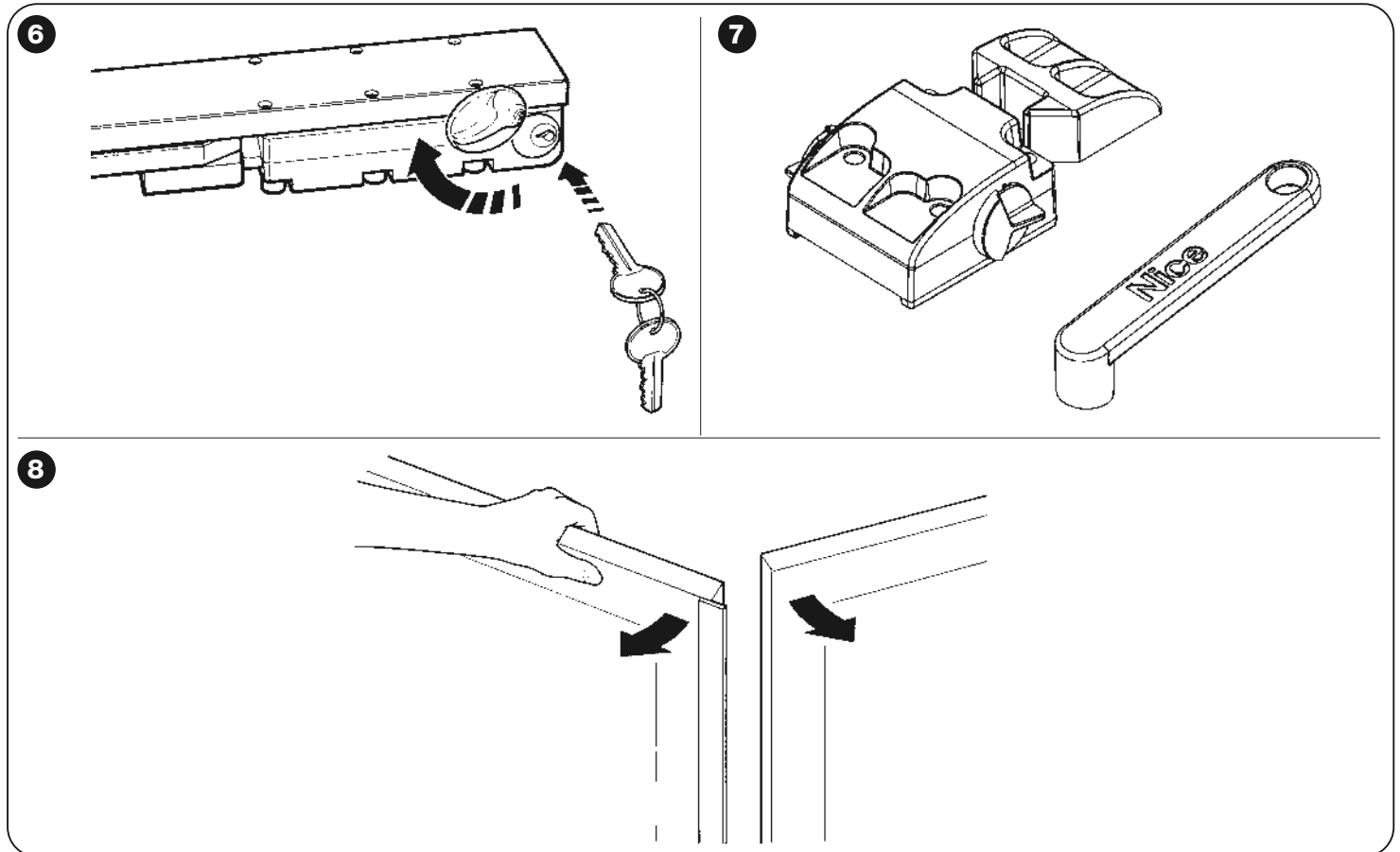
Perform the manual operation in the event of a power failure or system malfunction.

MEA2 Type KEY-Operated Release (fig. 6)

- A Pull down the lock cover as shown in the figure.
 - B Insert the key and rotate it 90° clockwise.
 - C Move the gate manually (fig. 8).
- ⚠ The system will revert to automatic operation upon the first electrical manoeuvre.

MEA3 Type Lever-Operated Release (fig. 7)

- A Pull down the lock cover as shown in the figure.
 - B Insert the key and rotate it 90° clockwise.
 - C Move the gate manually (fig. 8).
- ⚠ The system will revert to automatic operation upon the first electrical manoeuvre.



PRODUCT TECHNICAL FEATURES

RECOMMENDATIONS: • All technical features stated make reference at a room temperature of 20°C (± 5°C). • Nice S.p.a. reserves the right to modify the product at any time it deems necessary, however maintaining the same functionality and destination of use.

■ Type	Electro-mechanical gear motors for gates and doors with hinged panels
■ Power input	24 V $\overline{\text{---}}$
■ Peak absorption	7 A
■ Maximum absorption	2 A
■ Potenza di picco	170 W
■ Maximum power	50 W
■ Protection rating	IP 67
■ Run	from 0° to 110° or 360°
■ Idle speed	0,8 rpm
■ Speed at nominal torque	0,65 rpm
■ Maximum torque	400 Nm
■ Nominal torque	100 Nm
■ Functioning temperature	from -20 °C to +50 °C
■ Cycles/hour at the nominal torque	45
■ Duration	Estimated between about 100.000 e 250,000 manoeuvre cycles, according to the conditions given in Table 1
■ Dimensions	230 mm x 206 mm x h 88 mm
■ Weight	15 Kg (gear motor with foundation space)

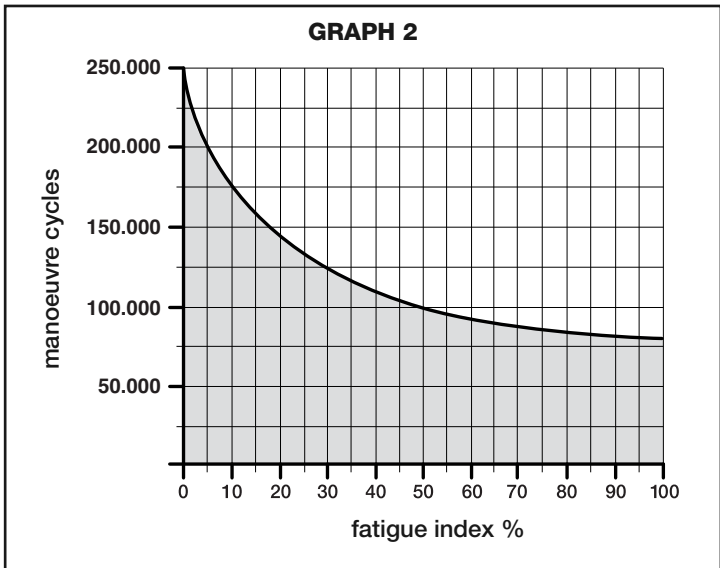
Product duration

The duration and average economic life of the product. The value of duration is strongly affected by the fatigue index of the manoeuvres performed by the automation: i.e. the sum of all factors that contribute to wear of the product (see Table 1).

To establish the probable duration of your automation, proceed as follows:

- 01. Calculate the fatigue index by adding the percentage values of the items present in **Table 1**;
- 02. In **Graph 2** of the value just found, trace a vertical line that crosses the curve; from this point trace a horizontal line until the "manoeuvre cycles" line is crossed. The value determined is the estimated duration of your product.

The estimation of duration is made on the basis of the design calculations and the test results performed on prototypes. In fact, as it is an estimate, it does not represent any guarantee regarding the effective duration of the product.



Length of the panel	≤ 2 m	2 - 3 m	3 - 4 m	4 - 5 m	
Weight of the panel	Fatigue index				
	< 150 Kg	0 %	10 %	20 %	30 %
	150 - 350 Kg	10 %	20 %	30 %	40 %
	350 - 550 Kg	20 %	30 %	40 %	50 %
	550 - 750 Kg	30 %	40 %	50 %	-
750 - 900 Kg	40 %	50 %	-	-	
Environmental temperature exceeding 40°C or below 0°C or humidity exceeding 80%				15 %	
Blind panel				20 %	
Installation in windy area				15 %	

Example of the duration calculation of an Big Metro gear motor (refer to Table 1 and Graph 2):

- panel length: 3 m and panel weight: 500 Kg = fatigue index: 30%
 - Installation in windy areas = fatigue index: 15%
 - does not have other elements of fatigue
- Total fatigue index = 45%*
Estimated duration = 110.000 manoeuvre cycles

**CE DECLARATION OF CONFORMITY
and declaration of incorporation of "quasi machinery"**

Declaration in accordance with the Directives: 2004/108/EC (EMC); 2006/42/EC (MD) appendix II, part B

*Note - The contents of this declaration correspond to declarations in the official document deposited at the registered offices of Nice S.p.a. and in particular to the last revision available before printing this manual. The text herein has been re-edited for editorial purposes.
A copy of the original declaration can be requested from Nice S.p.a. (TV) I*

Number: 389/BM..	Revision: 0	Language: EN
Manufacturer's Name:	NICE s.p.a.	
Address:	Via Pezza Alta 13, Z.I. Rustignè, 31046 Oderzo (TV) Italy	
Person authorised to draw up technical documentation:	Mr. Oscar Marchetto	
Type:	"Big Metro" electromechanical gearmotor	
Models:	BM5024	
Accessories:		

The undersigned, Luigi Paro, in the role of Managing Director, declares under his sole responsibility, that the product specified above conforms to the provisions of the following directives:

- DIRECTIVE 2004/108/EC OF THE EUROPEAN PARLIAMENT AND COUNCIL of 15 December 2004 regarding the approximation of member state legislation related to electromagnetic compatibility, repealing directive 89/336/EEC, according to the following harmonized standards: EN 61000-6-2:2005, EN 61000-6-3:2007
- Directive 2006/42/EC THE EUROPEAN PARLIAMENT AND COUNCIL of 17 May 2006 regarding machinery and which amends directive 95/16/EC (recasting)
- It is hereby declared that the pertinent technical documentation has been compiled in compliance with appendix VII B of directive 2006/42/EC and that the following essential requirements have been observed: 1.1- 1.1.2- 1.1.3- 1.2.1-1.2.6- 1.5.1-1.5.2- 1.5.5- 1.5.6- 1.5.7- 1.5.8- 1.5.10- 1.5.11
- The manufacturer undertakes to transmit to the national authorities, in response to a motivated request, all information regarding the "quasi-machine", while maintaining full rights to the related intellectual property.
- Should the "quasi machine" be put into service in a European country with an official language other than that used in this declaration, the importer is obliged to arrange for the relative translation to accompany this declaration.
- The "quasi-machine" must not be used until the final machine in which it is incorporated is in turn declared as compliant, if applicable, with the provisions of directive 2006/42/EC.

The product also complies with the following standards:
EN 60335-1:2002 + A1:2004 + A11:2004 + A12:2006 + A2:2006 + A13:2008, EN 60335-2-103:2003

The product also complies, within the constraints of applicable parts, with the following standards:
EN 13241-1:2003, EN 12445:2002, EN 12453:2002, EN 12978:2003

Oderzo, 1 April 2011

Luigi Paro (Managing Director)

BM4024 / BM4000



Swing gate opener



ISO190A03MM_03-10-2012

EN - Addendum to the BIG METRO manual

IT - Addendum al manuale BIG METRO

FR - Addendum au manuel BIG METRO

ES - Addendum al manual BIG METRO

DE - Nachtrag zur Anleitung BIG METRO

PL - Załącznik do instrukcji BIG METRO

NL - Addendum bij de handleiding BIG METRO

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Nice

EN - Warning for models BM4024 and BM4000: the paragraphs "Product application limits", "Electrical Connections" and "Product Technical Specifications", reported in this addendum, replace those of the "BIG METRO" instruction manual.

IT - Avvertenza per i modelli BM4024 e BM4000: i paragrafi "Limiti d'impiego del prodotto", "Collegamenti elettrici" e "Caratteristiche tecniche del prodotto", riportati nel presente addendum, sostituiscono quelli del manuale istruzioni "BIG METRO".

FR - Avertissement pour les modèles BM4024 et BM4000 : les paragraphes « Limites d'utilisations du produit », « Branchements électriques » et « Caractéristiques techniques du produit », rapportées dans le présent addendum, remplacent ceux du manuel d'instructions « BIG METRO ».

ES - Advertencia para los modelos BM4024 y BM4000: los apartados "Límites de empleo del producto", "Conexiones eléctricas" y "Características

técnicas del producto", indicados en el presente anexo, sustituyen a los que se encuentran en el manual de instrucciones de "BIG METRO".

DE - Hinweis für die Modelle BM4024 und BM4000: Die Kapitel „Nutzungsgrenzen des Produktes“, „Elektrische Anschlüsse“ und „Technische Eigenschaften des Produktes“ in diesem Anhang ersetzen die entsprechenden Kapitel in der Bedienungsanleitung „BIG METRO“.

PL - Ostrzeżenie dla modeli BM4024 i BM4000: rozdziały „Ograniczenia w zastosowaniu urządzenia”, „Połączenia elektryczne” oraz „Parametry techniczne urządzenia” przedstawione w niniejszym dodatku zastępują odpowiednie rozdziały znajdujące się w instrukcji „BIG METRO”.

NL - Alleen voor de modellen BM4024 en BM4000: de paragrafen "Gebruikslimieten van het product", "Elektrische aansluitingen" en "Technische gegevens van het product" van deze bijlage vervangen de corresponderende paragrafen in de "BIG METRO"-gebruikershandleiding.

EN 3.3 - Limits of use for the product

Before installing the product, check that the gate panel has dimensions and weight that lie within the limits given in **graph 1**; also evaluate the climatic conditions (e.g. strong wind) present in the place of installation: they can greatly reduce the values given in the graph.

IT 3.3 - Limiti d'impiego del prodotto

Prima di eseguire l'installazione del prodotto, verificare che l'anta del cancello abbia dimensioni e peso rientranti nei limiti riportati nel **grafico 1**; valutare anche le condizioni climatiche (es. vento forte) presenti nel luogo d'installazione: queste possono ridurre notevolmente i valori riportati nel grafico.

FR 3.3 - Limites d'utilisation du produit

Avant d'installer le produit, vérifier que le vantail du portail présente des dimensions et un poids compris dans les limites reprises au **graphique 1**; évaluer aussi les conditions climatiques (ex. vent fort) existantes dans le lieu d'installation: elles peuvent réduire considérablement les valeurs reprises sur le graphique.

ES 3.3 - Límites de uso del producto

Antes de instalar el producto, controle que las dimensiones y el peso de la hoja de la cancela estén dentro de los límites que se muestran en el **gráfico 1**; evalúe también las condiciones climáticas (ej. viento fuerte) presentes en el lugar de la instalación: ya que pueden reducir considerablemente los valores mostrados en el gráfico.

DE 3.3 - Einsatzgrenzen des Produkts

Vor der Installation des Produkts ist zu prüfen, ob Abmessungen und Gewicht des Torflügels innerhalb der in **Diagramm 1**; angegebenen Grenzen liegen; zu berücksichtigen sind auch die klimatischen Bedingungen (z. B. starker Wind), die am Installationsort vorherrschen und die im Diagramm angegebenen Werte deutlich verringern können.

PL 3.3 - Ograniczenia związane z użyciem produktu

Przed zamontowaniem produktu należy sprawdzić, czy wymiary i ciężar skrzydła bramki znajdują się w zakresie granic wskazanych na **wykresie 1**; należy oszacować również warunki klimatyczne (np. silny wiatr) w miejscu montażu: które mogą znacznie ograniczyć wartości wskazane na wykresie.

NL 3.3 - Gebruikslimieten van het product

Alvorens het product te installeren, moet gecontroleerd worden of de vleugel van het hek de afmetingen en het gewicht heeft die zich binnen de limieten van **grafiek 1** bevinden. Beoordeel ook de klimaatsomstandigheden (bijvoorbeeld sterke wind) in de plaats van installatie: deze kunnen de waarden in de grafiek aanzienlijk verlagen.

EN 5 - Electrical Connections

For BM4000, connect the cables as follows:

- **Black** = "open" phase
- **Brown** = "close" phase
- **Grey** = Common
- **Yellow/Green** = ⊕

IT 5 - Collegamenti elettrici

Per il BM4000, collegare i cavi nel modo seguente:

- **Nero** = Fase "apre"
- **Marrone** = Fase "chiude"
- **Grigio** = Comune
- **Giallo/Verde** = ⊕

FR 5 - Branchements électriques

Pour le modèle BM4000, brancher les câbles comme suit :

- **Noir** = phase « ouverture »

- **Marron** = phase « fermeture »
- **Gris** = commun
- **Jaune/Vert** = ⊕

ES 5 - Conexiones eléctricas

Para el BM4000 conecte los cables de la siguiente manera:

- **Negro** = Fase "abrir"
- **Marrón** = Fase "cerrar"
- **Gris** = Común
- **Amarillo/Verde** = ⊕

DE 5 - Elektrische Anschlüsse

Für BM4000, die Kabel wie folgt anschließen:

- **Schwarz** = Phase "öffnet"
- **Braun** = Phase "schließt"
- **Grau** = Gemeinsam
- **Gelb/Grün** = ⊕

PL 5 - Połączenia elektryczne

Dla BM4000, podłącz przewody w następujący sposób:

- **Czarny** = Faza "otwiera"
- **Brązowy** = Faza "zamyka"
- **Szary** = Wspólny
- **Żółto/zielony** = ⊕

NL 5 - Elektrische aansluitingen

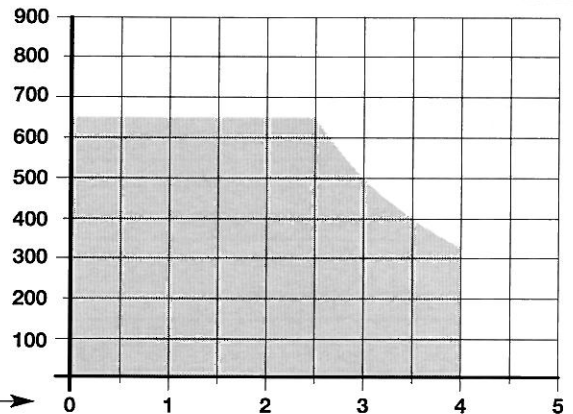
Sluit voor de BM4000 de kabels als volgt aan:

- **Zwart** = Fase "open"
- **Bruin** = Fase "sluit"
- **Grijs** = Gemeenschappelijk
- **Groengeel** = ⊕

• EN - GRAPH 1 • IT - GRAFICO 1 • FR - GRAPHIQUE 1 • ES - GRÁFICO 1 • DE - DIAGRAMM 1 • PL - WYKRES 1 • NL - GRAFIEK 1

EN - Panel max weight (Kg)
IT - Peso massimo dell'anta (Kg)
FR - Poids max du vantail (Kg)
ES - Peso máx. de la hoja (Kg)
DE - Max. Flügelgewicht (Kg)
PL - Max ciężar skrzydła (Kg)
NL - Max gewicht vleugel (Kg)

EN - Panel max length (m)
IT - Lunghezza massima dell'anta (m)
FR - Longueur max du vantail (m)
ES - Longitud máx. de la hoja (m)
DE - Max. Flügelänge (m)
PL - Max długość skrzydła (m)
NL - Max lengte vleugel (m)



EN - PRODUCT TECHNICAL FEATURES

RECOMMENDATIONS: • All technical features stated make reference to a room temperature of 20°C (± 5°C). • Nice S.p.a. reserves the right to modify the product at any time it deems necessary, however maintaining the same functionality and destination of use.

	BM4024	BM4000
■ Type	Electro-mechanical gear motors for gates and doors with hinged panels	
■ Power input	24 V _{DC}	230 V _{AC}
■ Peak absorption	5 A	1,5 A
■ Maximum absorption	1,5 A	1 A
■ Peak Power	120 W	340 W
■ Maximum power	36 W	180 W
■ Capacitor incorporated	-	7µF
■ Protection rating	IP 67	
■ Run	from 0° to 110° or 360°	
■ Idle speed	1 rpm (1,25 rpm*)	0,85 rpm
■ Speed at nominal torque	0,85 rpm	0,65 rpm
■ Maximum torque	300 Nm	500 Nm
■ Nominal torque	75 Nm	125 Nm
■ Functioning temperature	from -20°C to +50°C	
■ Cycles/hour at the nominal torque	60	20
■ Dimensions	375 mm x 225 mm x h 110 mm	
■ Weight	12,5 Kg	14,3 Kg

* Value refers to a power supply voltage of 30V.



control units

mindy A60

Installation instructions

Istruzioni per l'installazione

Instructions pour l'installation

Installationenleitungen

Instrucciones para la instalación

Instrukcja instalowania

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



mindy A60

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2	Installation	6	6	Programmable functions	11
2.1	Typical system layout	6	6.1	Description of functions	12
2.2	Electrical connections	7	7	Optional accessories	13
2.2.1	Electrical diagram	7	8	Maintenance	13
2.2.2	Description of connections	7	9	Disposal	13
2.2.3	Phototest	8	10	What to do if...	13
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3	Adjustments	9			
4	Testing	10			

Warnings:

⚠ ATTENTION: This manual has been especially written for use by qualified installation technicians. No information contained herein can be considered as being of interest to end users!

The control unit is designed for controlling electromechanical actuators for gate automation; any other use is inappropriate and forbidden by current regulations.

Read all the instructions carefully at least once before installing the unit.

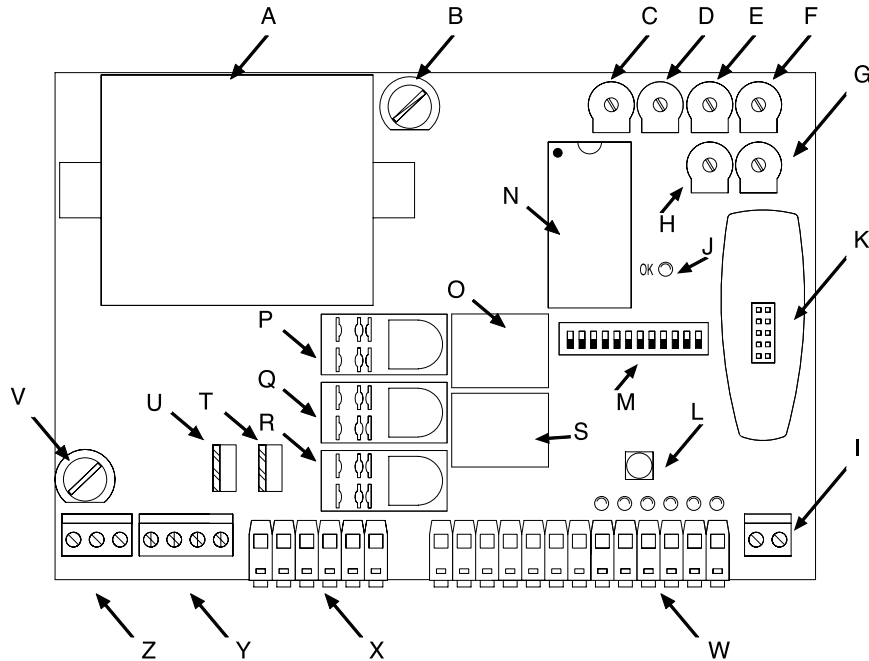
1) Product description:

This control unit for the automation of gates and doors enables control of two gearmotors with single-phase alternating current. The unit features a series of Dip-switches (mini switches) that enable the selection of the various functions, as well as trimmers used for making adjustments.

inputs. An additional LED located near the microprocessor indicates whether the internal logic is operating properly.

To facilitate part identification, **Fig.1** below shows the most significant components.

The status of the inputs is signalled by LED's located next to the



1

- | | |
|--|---|
| A Transformer | O Electric lock relay |
| B Low voltage fuse (500 mA F) | P Common motor relay |
| C Force adjustment trimmer (F) | Q Courtesy light relay |
| D Pause Time adjustment trimmer (TP) | R Open / Close movement direction relay |
| E Opening Time Delay adjustment trimmer (TRA) | S Phototest relay |
| F Motor 1 Working Time adjustment trimmer (TL1) | T Motor 2 Triac |
| G Motor 2 Working Time adjustment trimmer (TL2) | U Motor 1 Triac |
| H Closing Time Delay adjustment trimmer (TRC) | V Line fuse (5A F) |
| I Terminal board for aerial | W Input / output control terminal board |
| J LED OK | X Motor outputs terminal board |
| K Radio slot connector | Y Flashing / C.tsy light output terminal board |
| L Step-by-step button | Z Power supply terminal board |
| M Function selection Dip-Switch | |
| N Microprocessor | |

Warnings:

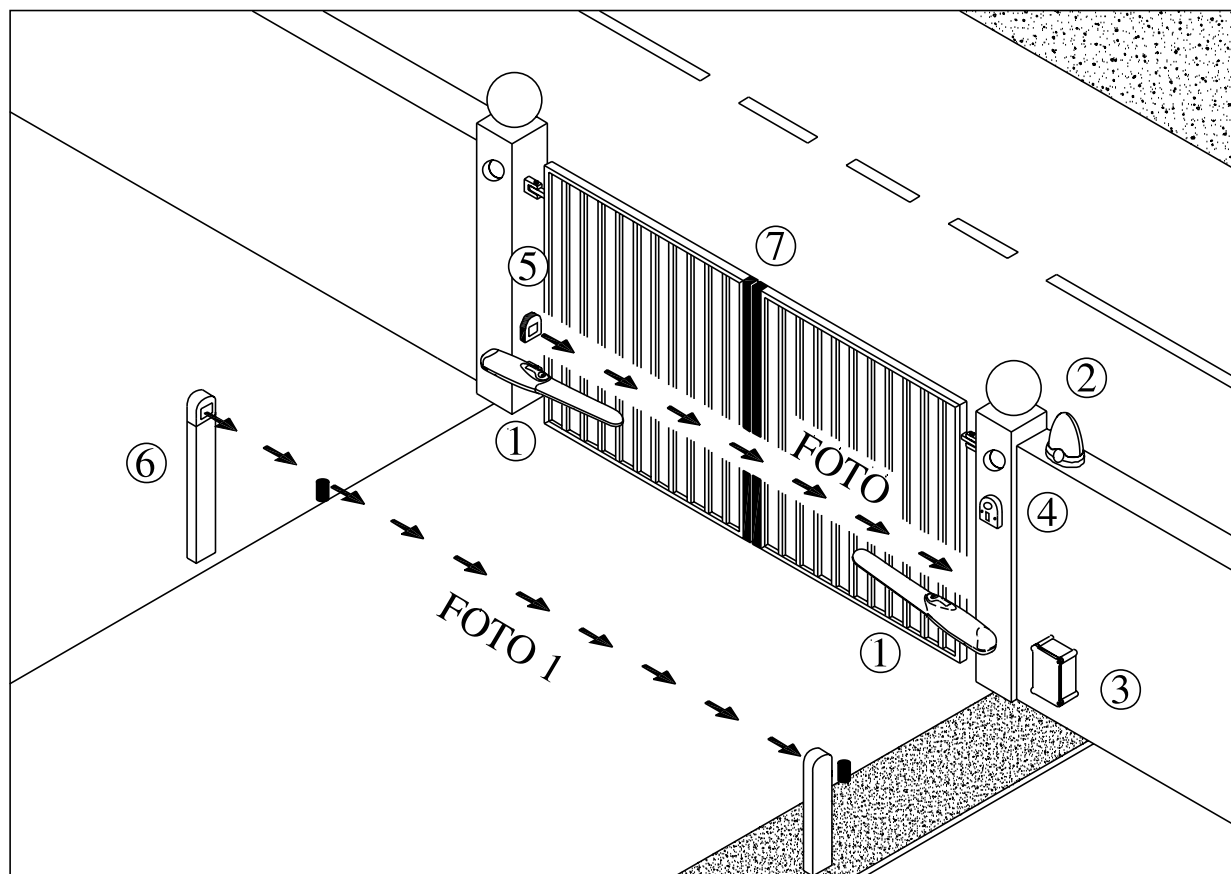
⚠ ATTENTION: If you need to replace a fuse, be careful to use one of the same type and having identical characteristics: **Dimensions 5x20; Rated current (e.g. 5A); Blowout characteristics (T = Delayed F = Quick); Maximum voltage and breaking capacity.**

2) Installation:

⚠ATTENTION: Automatic gate and door systems may only be installed by qualified technicians in compliance with current legislation. Observe the directions contained in the “Warnings for fitters” file.

2.1) Typical system layout

In order to explain certain terms and aspects of automatic gate systems, we will now illustrate a typical system layout.



2

- 1) Electromechanical actuators
- 2) Flashing light
- 3) Control unit
- 4) Key-operated selector switch
- 5) Pair of photocells (PHOTO)
- 6) Pair of photocells (PHOTO1)
- 7) Sensitive edges

In particular, please note that:

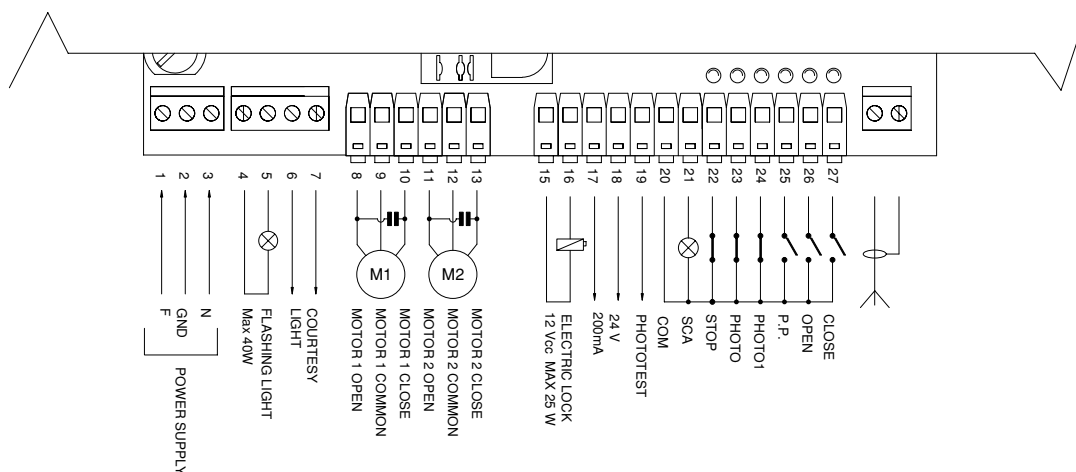
- All the photocells produced by NICE feature a synchronisation system that eliminates the problem of interference between two pairs of photocells (please consult the photocell instructions for further details).
- The “PHOTO” pair of photocells have no effect when the gate is opening, while they reverse movement when the gate is closing.
- The “PHOTO1” pair of photocells cause a temporary stop when the gate is opening, whereas they reverse movement when the gate is closing.
- The triggering of the sensitive edge connected to the “ALT” input causes an immediate stop and a short reverse run.

2.2) Electrical connections:

▲ ATTENTION: To safeguard the operator and avoid damaging the components, make sure that the control unit is switched off while you are wiring or plugging in the various cards

- Power the control unit using a 3 x 1.5 mm² cable; should the distance between the unit and the earth connection exceed 30m, install an earth plate near the unit.
- Use wires with a minimum cross-section of 0.25 mm² to connect extra-low voltage safety circuits.
- Use shielded wires if the length exceeds 30m and only connect the earth braid to the control unit side.
- Do not make connections to cables in buried boxes even if they are completely watertight.
- If the inputs of the Normally Closed (NC) contacts are not used, they should be jumped with the "24V common" terminal except for the photocell inputs if the phototest function is enabled. For further information please see the "Phototest" paragraph.
- If there is more than one (NC) contact on the same input, they must be connected in SERIES.
- If the inputs of the Normally Open (NA) contacts are not used they should be left free.
- If there is more than one (NA) contact on the same input, they must be connected in PARALLEL.
- The contacts must be mechanical and potential-free; no stage connections are allowed, such as those defined as "PNP", "NPN", "Open Collector", etc.

2.2.1) Electrical diagram



2.2.2) Description of connections

The following table provides a brief description of the possible control unit output connections.

Terminals	Function	Description
1-2-3	Power supply	= Mains power line
4 – 5	Flashing light	= Output for connecting flashing light to mains voltage (Max. 100W)
6 – 7	Courtesy light	= Clean contact output for courtesy light connection (Max. 5A)
8-9-10	Motor1	= Motor 1 control output, max. motor power 1/2 Hp
11-12-13	Motor2	= Motor 2 control output, max. motor power 1/2Hp
15 -16	Electric lock	= 12 Vdc output for electric lock activation, max. power 25W
17 – 18	24 Vac	= Power supply to 24Vac services (Max. 150 mA)
19	Phototest	= Phototest output - "TX" power supply to photocells - (Max. 75 mA)
20	Common	= Common for all inputs
21	AC light	= 24 Vac output for open gate indicator light (Max. 2W)
22	Stop	= Input with "Stop" function (Stop and short reverse run)
23	Photo	= Input for safety devices
24	Photo1	= Input for additional safety device
25	Step by step (PP)	= Input for cyclic movement ("Open" – "Stop" – "Close" – "Stop")
26	Open	= Input for opening function
27	Close	= Input for closing function
⌚	Aerial	= Input for the radio receiver aerial

2.2.3) Phototest

The "Phototest" function improves the reliability of the safety devices and puts the control unit and safety photocells in "category 2" according to EN 954-1 standard (ed. 12/1998). Each time a manoeuvre is begun, the related safety devices are checked and the manoeuvre is started only if everything is in order. Should the test be unsuccessful (the photocell is blinded by the sun, cables have short circuited, etc.) the failure is identified and the manoeuvre is not carried out.

To enable the Phototest function:

- Set Dip Switch 10 to ON
- Connect the safety devices as shown in **fig.4a** (when using the PHOTO output alone), or as shown in **fig.4b** (when using PHOTO1 as well).


The photocell transmitters are not powered directly from the service output, but through the dedicated PHOTOTEST output. The maximum current available at the PHOTOTEST output is 75mA (3 pairs of photocells).

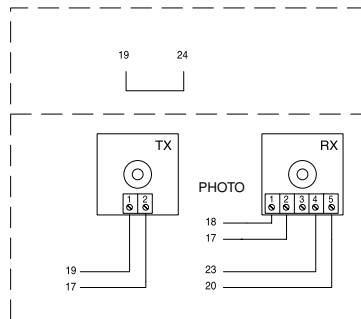
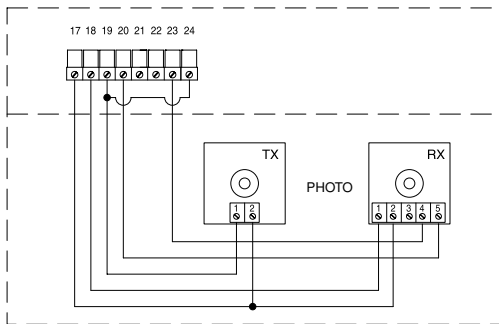
- Power the receivers directly from the service output of the control unit (terminals 17-18).

The photocells are tested as follows: when a movement is required, all the receivers involved in the movement are checked to make sure they give their consent, then power to the transmitters is disconnected; next all the receivers are checked to make sure they signal the fact by withholding their consent; the transmitters are then powered and the consent of all the receivers is verified once more. Only if this sequence is successfully carried out will the manoeuvre be performed.

It is always a good idea to activate the synchronisation function by cutting the jumpers on the transmitters. This is the only way to make sure that two pairs of photocells will not interfere with each other. Read the instructions for "SYNCHRONISED" operation in the photocell manual.

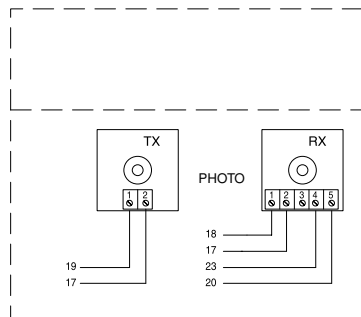
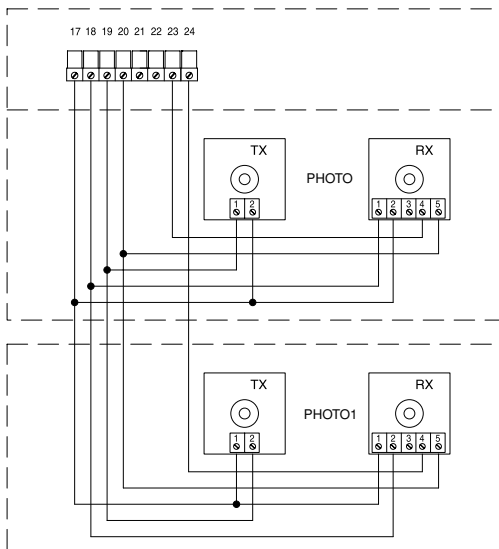
If an input subjected to PHOTOTEST is not being used (see PHOTO1) but you still require the phototest function, connect the unused input with the PHOTOTEST output (terminals 19-24) using a jumper; see **fig. 4a**.

 If at a later time the Phototest function is no longer required, set Dip-Switch 10 to the OFF position.



4 a

"PHOTO" with phototest



4 b

"PHOTO" and "PHOTO1" with phototest

2.2.4) Checking the connections

⚠ The following operations entail working on live circuits; most of these run on extra-low safety voltage so they are not dangerous; however, some are mains voltage circuits, which means they are HIGHLY DANGEROUS! Pay the utmost attention to what you are doing and NEVER WORK ALONE!

- Power the control unit and check that voltage between terminals 17-18 is approx. 24Vac.
- Check that the "OK" LED flashes rapidly for a few moments and then that it flashes at a regular frequency.
- Now check that the LED's related to the N.C. (Normally Closed) contacts are on (all safety devices active) and that the LED's related to the N.O. (Normally Open) inputs are off (no command); if this is not the case, check the connections and efficiency of the various devices. The STOP input switches off both FCA and FCC.
- Release the leaves, take them to the halfway point and then stop them; this way the leaves will be free to move in either the opening or closing direction.
- Now make sure that movement occurs in the right direction, i.e., see whether the movement set on the unit corresponds to that of the leaves. This check is of paramount importance, if the direction is wrong, in some cases (in the "Semiautomatic" mode, for instance) the "Automatic" system might appear to be working properly; in fact, the OPEN cycle is similar to the CLOSE cycle but with one basic difference: the safety devices are ignored in the closing manoeuvre, which is normally the most dangerous, and they will trigger in the opening manoeuvre, causing the gate to close against an obstacle with disastrous results!
- To see whether the direction of rotation is correct, give a short impulse to the Open input and make sure that the automatic

system moves in the opening direction; if this movement is incorrect, proceed as follows:

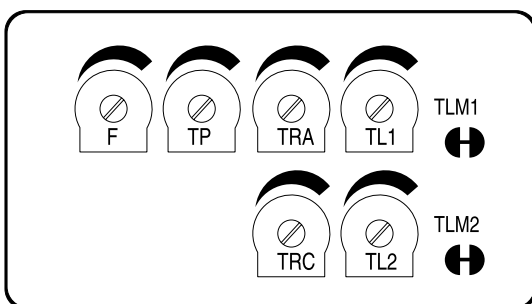
- Turn the power off
- Invert the power conductors of the wrong motor/s. (In the case of M1, invert the connection of terminals 8-10; for M2, invert the connection of terminals 11 – 13).
- Once this has been done, check whether the direction of rotation is correct by repeating the last operation.



The "OK" LED located in the centre of the board next to the microprocessor has the task of signalling the status of the internal logic: regular flashing at 1 second intervals indicates that the internal microprocessor is active and waiting for commands. When the microprocessor recognises a variation in the status of an input (whether it is a command or a function Dip-Switch input) it generates a rapid double flash even if the variation does not have any immediate effects. Extremely rapid flashing for 3 seconds means that the control unit has just been powered or is carrying out internal testing. Lastly, irregular flashing means that the test has been unsuccessful and that a fault has occurred.

3) Adjustments:

Adjustments can be made through trimmers that modify the following parameters:



• WORKING TIME (TL1 TL2):

These adjust the maximum duration of the opening or closing manoeuvre of motor 1 (TL1) and motor 2 (TL2).

To adjust the working times TL, select the "Semiautomatic" operating mode by setting Dip-Switch 1 to ON, then adjust the TL trimmers to halfway along the travel distance. Now run an opening and closing cycle and, if necessary, readjust the TL Trimmers in order to leave enough time for the whole manoeuvre plus a margin of about 2 to 3 seconds.

If the TL trimmers are at maximum and there still is not enough time to perform the entire manoeuvre, cut the TLM1 jumper to increase the

working time of motor 1 and cut the TLM2 jumper to increase the working time of motor 2. These jumpers are located alongside the corresponding trimmers.

If you wish to use the DECELERATION function (Dip-Switch 8 On), adjust the working time trimmers so that the motors begin the deceleration stage approximately 50 - 70cm before the opening or closing limit stops are reached.

• OPENING TIME DELAY (TRA) AND CLOSING TIME DELAY (TRC):

If the gate has two leaves that might jam if they start moving simultaneously, or that might overlap when closing, you need to adjust the Opening Time Delay trimmer (TRA) or the Closing Time Delay (TRC) trimmer to overcome these problems.

The TRA trimmer must be adjusted to ensure that the leaf moved by the second motor is out of the range of the leaf moved by the first motor when the latter starts moving.

The TRC trimmer must be adjusted to ensure that, during the closing operation, the leaf moved by the second motor reaches the end of its travel after the first motor has completed its closing manoeuvre.

• **PAUSE TIME (TP):**

In "Automatic" mode, this adjusts the time span between the end of the opening manoeuvre and the beginning of the closing manoeuvre.

To adjust Pause Time TP, select the "Automatic" operating mode by setting Dip-Switch 2 to ON, then adjust the TP trimmer as required.

To test the results, carry out an opening manoeuvre and check the time elapsed before the gate closes automatically.

• **FORCE (F):**

Take great care when adjusting the FORCE (F) trimmer, as this may affect the level of safety of the automatic system. Trial by error is required to adjust this parameter, measuring the force applied to the leaf and comparing it with regulatory values.

4) Testing:

After the above checks and adjustments have been made, the system can be tested.

▲ ATTENTION: The automation system must be tested by qualified and experienced personnel who must establish what tests to perform based on the risks involved.

Testing is the most important part of the whole automation process. Each single component, e.g. motor, emergency stop, photocells, etc., may require a specific test phase; please follow the procedures described in the operating instructions for each component.

To test the control unit, perform the following operations:

- 1 Function selection:
 - Set Dip Switch 1 to ON (Semi-automatic operation) and the remaining ones to OFF

- 2 Press the Open button and check that:
 - the flashing light is activated
 - the opening manoeuvre starts
 - the movement stops when the opening limit stop is reached.

- 3 Press the Close button and check that:
 - the flashing light is activated
 - the closing manoeuvre starts
 - the movement stops when the closing limit stop is reached.

- 4 Start an opening manoeuvre and make sure that during the manoeuvre the triggering of a device:
 - connected to the "Stop" input causes an immediate stop and a short reverse run
 - connected to the "Photo" input has no effect
 - Connected to the "Photo1" input causes a temporary stop and subsequent start-up in the same direction after Photo 1 has been cleared.

- 5 Start a closing manoeuvre and make sure that during the manoeuvre the triggering of a device:
 - connected to the "Stop" input causes an immediate stop and a short reverse run
 - connected to the "Photo" input causes the stop and subsequent reversal of the manoeuvre
 - connected to the "Photo1" input causes the stop and subsequent reversal of the manoeuvre.

- 6 On the connected inputs, make sure that each activation of the input generates a step in the following sequence:
 - Step-by-step input: Sequence = Open – Stop – Close – Stop
 - Open input: Sequence = Open – Stop – Open – Stop
 - Close input: Sequence = Close – Stop – Close – Stop

- 7 If the "Phototest" function is used, check the efficiency of the test:
 - Interrupt the "Photo" photocell, then start a manoeuvre and check that it is not performed
 - Interrupt the "Photo1" photocell, then start a manoeuvre and check that it is not performed
 - Short the "Photo" photocell contact, then start a manoeuvre and check that it is not performed
 - Short the "Photo1" photocell contact, then start a manoeuvre and check that it is not performed

- 8 Perform the tests for measuring the Impact Forces as required by EN 12445.

If after the completion of the testing process additional functions are activated which could affect the safety of the system, specific testing of these functions must be performed.

5) Operating modes

In the manual operating mode, the OPEN input enables an opening movement, while the CLOSE input enables a closing movement. The STEP-BY-STEP input enables an alternating opening and closing movement.

Movement stops as soon as the input command stops. During an opening or closing manoeuvre, movement will stop also when the command input or the signal from the safety devices is disabled. During both opening and closing manoeuvres, the activation of the STOP command will cause the movement to stop immediately. When a movement is stopped, stop the input command before giving a command to start a new movement.

When one of the automatic modes ("Semiautomatic", "Automatic" or "Automatic + Close Always") is operational, a command impulse to the OPEN input causes an opening manoeuvre. A command impulse to the STEP-BY-STEP input begins an alternating closing and opening manoeuvre. A second impulse to the STEP-BY-STEP input or to the same input the started the movement will cause it to stop.

Both in the opening and closing phases, the activation of the STOP command will cause an immediate stopping of movement and a

short reverse run

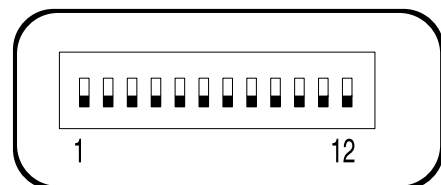
If a continuous signal rather than an impulse is maintained in a command input, a "prevalence" condition will be generated causing the other command inputs to be disabled **(this is useful if you need to connect a clock or a Night/Day selector switch)**.

If an automatic operating mode has been chosen, the opening manoeuvre will be followed by a pause and then a closing manoeuvre. If PHOTO triggers during the pause, the timer will be reset with a new pause time; if, on the other hand, STOP is activated during the pause, the closing function will be cancelled and the system will switch to the STOP mode.

Nothing will happen if PHOTO is triggered during an opening manoeuvre, whereas PHOTO1 will cause a temporary stopping of movement. If PHOTO is triggered during a closing manoeuvre, this will reverse the direction of movement followed by a pause and then a closing manoeuvre.

6) Programmable functions

The unit features a set of dip-switches used to activate various functions designed to make the system more suitable to users' needs and safer in different operating conditions. These functions can be activated by setting the related Dip-Switch to the "On" position, and deactivated by setting the dip-switch to "Off".



▲ ATTENTION: Some of the programmable functions are linked to safety aspects; carefully evaluate the effects of a function and see which function will ensure the highest possible level of safety.

The FUNCTION dip-switches allow you to select the various operating modes and to activate the desired functions according to the table below:

Switch 1-2:	Off-Off	= "Manual" movement, i.e. hand operated
	On-Off	= "Semiautomatic" movement
	Off-On	= "Automatic" movement, i.e. automatic closing
	On-On	= "Automatic + always close" movement
Switch 3:	On	= Condominium operation < not available in manual mode >
Switch 4:	On	= Pre-flashing
Switch 5:	On	= Close 5" after Photo < in automatic mode > or Close after Photo < in semiautomatic mode >
Switch 6:	On	= "Photo1" safety also during opening manoeuvres
Switch 7:	On	= Ramming
Switch 8:	On	= Deceleration
Switch 9:	On	= Maintain pressure
Switch 10:	On	= Phototest
Switch 11:	On	= Courtesy Light in impulse mode
Switch 12:	On	= Close becomes Open for Pedestrians

NOTE: Some functions are only available in certain conditions; these are explained by the notes between the characters "<...>".

6.1) Description of functions

Here is a brief description of the functions that can be added by setting the corresponding Dip-Switch to "ON".

Switch 1-2:	Off-Off	= "Manual" movement (hand operated)
	On-Off	= "Semiautomatic" movement
	Off-On	= "Automatic" movement (automatic closing)
	On-On	= "Automatic + Always Close" movement

In the "Manual" operating mode, the gate will only move as long as the control button is held down.

In "Semiautomatic" mode, a command impulse will perform the whole movement until the Working Time limit expires or the limit stop is reached.

In the "Automatic" operating mode, an opening manoeuvre is followed by a pause, after which the gate closes automatically.

The "Always Close" function comes into play following a power failure, automatically activating a closing manoeuvre preceded by 5 seconds of pre-flashing.

Switch 3: On = Condominium operation (not available in Manual mode)

In the Condominium operating mode, once an opening manoeuvre has started it cannot be interrupted by other command impulses, such as STEP-BY-STEP or OPEN, until the gate has finished opening.

During a closing manoeuvre, a new command impulse will stop the gate and reverse the direction of movement in order to open the gate.

Switch 4: On = Pre-flashing

A command impulse activates the flashing light, followed by movement 5 seconds later (2 seconds later in manual mode).

Switch 5: On = Close 5" after Photo < in automatic mode > or Close after Photo < in semiautomatic mode >

This function, in Automatic mode, allows the gate to be kept open only for the time required for transit; when the PHOTO stage is over, the manoeuvre stops. After 5 seconds a closing manoeuvre will automatically begin. If PHOTO triggers in the "Semiautomatic" mode during a closing manoeuvre, the "Automatic" closing manoeuvre is activated with a set pause time.

Switch 6: On = Safety (Photo1) also during the opening manoeuvre

The "Photo1" safety device is normally active only during the closing manoeuvre; if Dip-Switch 6 is turned "On", the safety device will cause the movement to stop also during the opening manoeuvre.

In the Semiautomatic or Automatic modes, the opening manoeuvre will start again immediately after the photocell has been disengaged.

Switch 7: On = Ramming

When reversible actuators are used, so that the gate does not remain closed thanks to the thrust of the motors alone, it is necessary to install an electric lock (see actuators' operating instructions).

The electric lock may apply a natural thrust to the gate, causing the leaves to open slightly; at times this thrust is so powerful as to cause the locking mechanism to jam.

With the ramming function on, a brief closing cycle is activated before an opening manoeuvre is started. This, however, will not generate any actual movement since the leaves will already be positioned against the closing limit stop.

This way, when the electric lock is activated it will be free from the effects of unwanted forces and will readily click open.

Switch 8: On = Deceleration

Deceleration reduces speed to 30% of rated speed in order to limit the force of the impact in the gate's opening and closing areas.



As well as reducing the speed of the manoeuvre, the deceleration function also reduces motor torque by 70%.

For systems requiring elevated torque, this decrease may cause the motor to stop immediately.

Once the deceleration function has been activated, it will be necessary to adjust the Working Time trimmer (TL), since the starting of deceleration is connected with the established working time.

Therefore, adjust the Working Time parameter to ensure that deceleration starts approximately 50-70cm before the limit stops.

Switch 9: On = Maintain pressure

With hydraulic actuators, the thrust required to keep the gate closed is generated by a hydraulic circuit which is constantly under pressure. However, time and wear tend to reduce the seal of the hydraulic circuit. Consequently, after a few hours of operation the internal pressure may drop, causing the leaves to open slightly.

If the "Maintain Pressure" function is enabled, every 4 hours that the gate remains closed a brief closing manoeuvre is activated in order to restore the hydraulic circuit pressure.

Switch 10: On = Phototest

This function checks photocell efficiency at the beginning of each manoeuvre. See the PHOTOTEST chapter.

Switch 11: On = Courtesy light in impulse mode

In this mode, the clean contact of the courtesy light output will remain closed for 1 sec. at the starting of each opening or closing manoeuvre, thus enabling a command impulse to be sent to an external timer.

Switch 12: On = CLOSE becomes OPEN for Pedestrians

In this mode, the CLOSE input loses its basic function and becomes a Pedestrian Step-by-Step input that allows the gate leaf controlled by motor 2 to be opened for pedestrian access.

The Pedestrian opening cycle can only be activated when the gate is closed, while if the gate is moving or open the impulse has no effect on the input.

7) Optional accessories

RADIO card

The control unit features a connector for plugging in an SM radio card, which activates the "Step-by-Step" and "Stop" inputs and allows the control unit to be remote-controlled through a transmitter.

output 1	STEP-BY-STEP
output 2	STOP
output 3	not used
output 4	not used

8) Maintenance

The control unit, being electronic, needs no special maintenance. However, periodically make sure (at least once every six months) that the device adjusting the motor force is in perfect working order; adjust with the trimmer if necessary. Carry out the entire testing process again to make sure that the safety devices (photocells, pneumatic edges, etc.) and the flashing light are in perfect working order.

9) Disposal

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

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

10) What to do if ...

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

No LED is on:

- Check whether the control unit is powered (make sure that mains voltage is present at terminals 1-3 and a voltage of approx. 24Vac at terminals 17-18).
- Check the 2 mains fuses have not blown; if none of the LED's comes on a serious fault has probably occurred and the control unit should therefore be replaced.

The OK LED flashes regularly but the INPUT LED's do not reflect the status of the corresponding inputs

- Carefully check the connections on input terminals 20÷27

The manoeuvre does not start

- Check that the LED's for the STOP, PHOTO and PHOTO1 safety devices are on, and that the LED for the activated command (STEP-BY-STEP, OPEN or CLOSE) remains on for the whole duration of the command.

The gate changes direction during a manoeuvre

Reversal of movement is caused by:

- Triggering of the photocells (PHOTO and PHOTO1); in this case, check the photocell connections and, if necessary, check the input LED's.

11) Technical characteristics

Mains power supply	A60	: 230 Vac 50/60 Hz
	A60/V1	: 120 Vac 50/60 Hz
Max current for 24 V services		: 200mA (the voltage may vary \pm 25%)
Maximum actuator power		: two 400 VA motors (2A) approx. 1/2 Hp.
Flashing light output		: For flashing lights at mains voltage, maximum power 40 W
"SCA" open gate telltale light output		: For 24 Vac telltale lights, maximum power 2 W
Operating temperature		: -20 \div 70 °C
Working Time (TL1) and (TL2)		: Adjustable from 2.5 to >40 s, or from <40 to >80 s with TLM
Pause Time (TP)		: Adjustable from 5 to >80 sec.
Opening Time Delay (TRA)		: 0 or 2.5 to 12 sec.
Closing Time Delay (TRC)		: 0 or 2.5 to 12 sec.
Dimensions		: 280 x 220 x 110
Protection class		: IP 55


SMXi radio receiver



Description of the product

The special thing about this type of radio receiver is that the recognition code is different for each transmitter (it also changes every time it is used).

Therefore, in order to allow the receiver to recognise a determined transmitter, the recognition code must be memorised. This operation must be repeated for each transmitter required to communicate with the control unit.

 *Up to a maximum of 256 transmitters can be memorised in the receiver. No one transmitter can be cancelled; all the codes must be deleted.*

During the transmitter code memorisation phase, one of these options may be chosen:

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

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

Installing the aerial

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

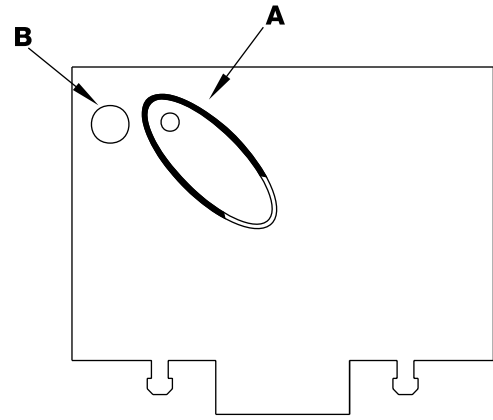
If the aerial is installed in a place that is not connected to earth (masonry structures), the braid's terminal can be earthed to provide a larger range of action. The earth point must, of course, be local and of good quality. If an ABF or ABFKIT aerial cannot be installed, you can get quite good results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

Memorising a remote control

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

The procedures for memorising the remote controls must be performed within a certain time limit; please read and understand the whole procedure before starting.

In order to carry out the following procedure, it is necessary to use the button located on the box of the radio receiver (reference A, **Fig. 1b**), and the corresponding LED (reference B, **Fig. 1b**) to the left of the button.



1b

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

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

Remote memorising








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

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

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

Deleting all transmitters

All the memorised codes can be deleted as follows:

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

Technical characteristics

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

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

Dichiarazione CE di conformità / EC declaration of conformity

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

Numero /Number : 151/SMXI

Data / Date: 5/2002

Revisione / Revision: 0

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

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

Nome produttore / Producer name: NICE s.p.a.
Indirizzo / Address: Via Pezza Alta 13, 31046 Z.I. Rustignè -ODERZO- ITALY
Tipo / Type: Ricevitore radio 433MHz / Radio receiver 433MHz
Modello / Model: SMXI, SMXIS, SMXIF

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

Riferimento n°	Edizione	Titolo	Livello di valutazione	Classe
Reference n°	Issue	Title	Assessment level	Class
1999/5/CE	1999	DIRETTIVA R&TTE/R&TTE Directive		
ETS300683	1997	Radio Equipment and Systems (RES); Electromagnetic Compatibility (EMC) standard for Short Range Devices (SRD) operating on frequencies between 9KHz and 25GHz		II
EN300220-3	2000	APPARATI RADIO E SISTEMI - CARATTERISTICHE TECNICHE E METODI DI MISURA PER APPARATI RADIO TRA 25MHz A 1000MHz Radio Equipment and Systems- Short Range Devices- Technical characteristics and test methods for radio equipment between 25MHz and 1000MHz REGOLAZIONE ALL'USO DEI DISPOSITIVI A CORTO RAGGIO Regulating to the use of short range devices (SRD)		I (LPD)
EN60950 2nd ed.	1992	APPARECCHIATURE PER LA TECNOLOGIA DELL'INFORMAZIONE. SICUREZZA. +A1: 1993 + A2: 1993 + A3: 1995 + A4: 1997 + A11: 1997 + EN41003/1993.		

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

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

Oderzo, li 13 Maggio 2002

(Amministratore Delegato)
 (General Manager)
 Lauro Buoro

