# DYNAMOS

**I**

**Motoriduttore elettromeccanico per l'automazione di cancelli scorrevoli. Istruzioni ed avvertenze per l'installazione e l'uso**

**D**

**Elektromechanischer Getriebemotor für Automatisierungen von Schiebetorantrieb. Installierungs- und Gebrauchsanleitungen und Hinweise**

**GB**

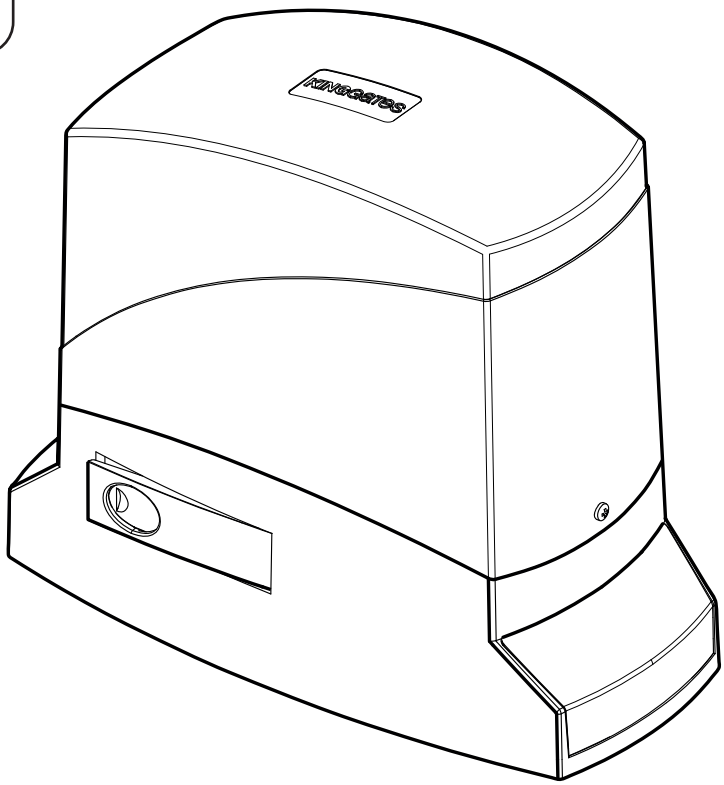
**Electromechanical gearmotor for the automation of sliding gates. Installation and use instructions and warnings**

**E**

**Motorreductor electromecánico para automatizar puertas correderas. Instrucciones y advertencias para la instalación y el uso**

**F**

**Opérateur électromécanique pour portails coulissants. Instructions et avertissements pour l'installation et l'utilisation**



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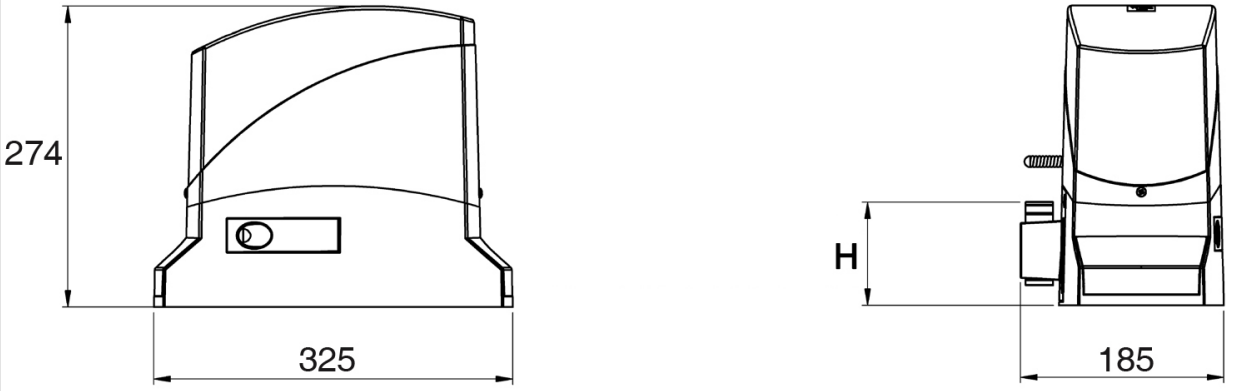


**H =** **90 mm (DYNAMOS24/400 - DYNAMOS24/600)**
**94 mm (DYNAMOS24/1000 - DYNAMOS230/500 - DYNAMOS230/1000)**

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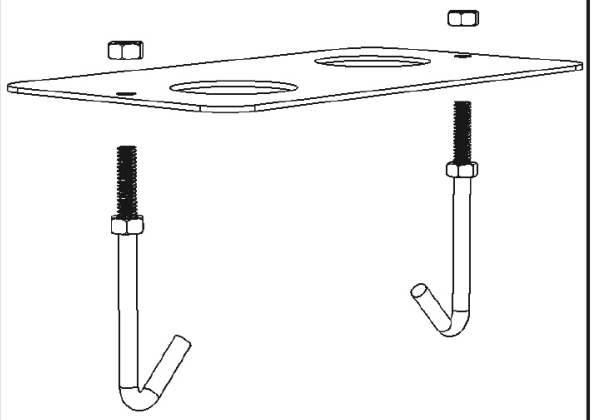

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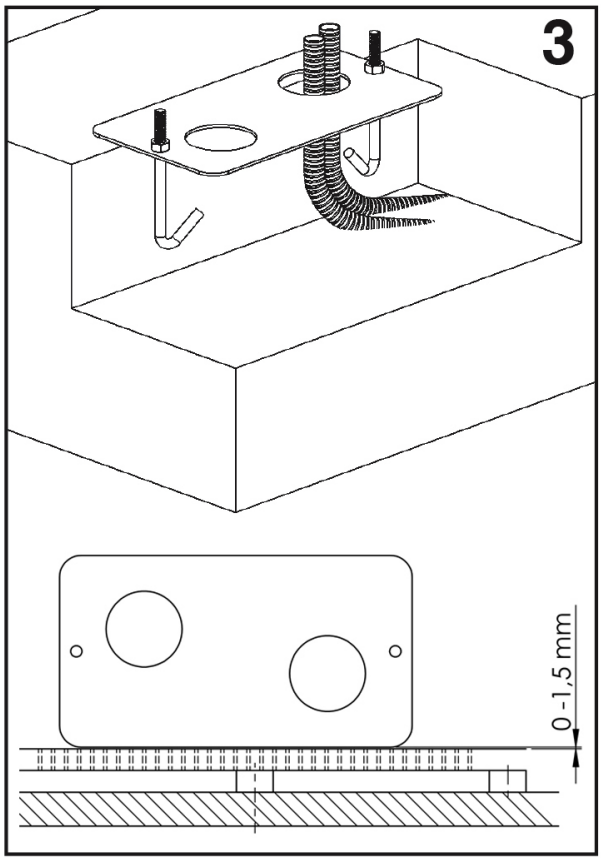


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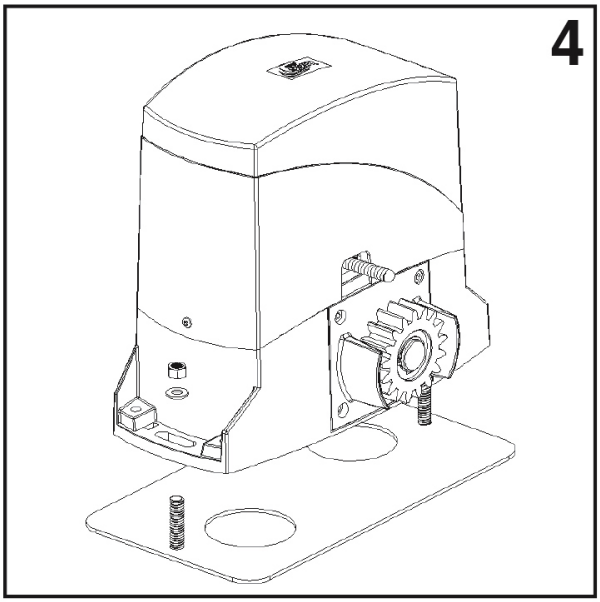

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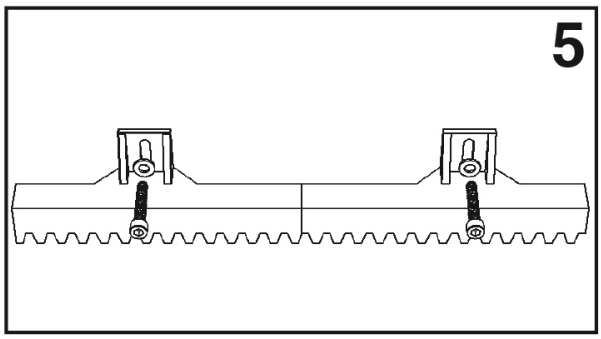

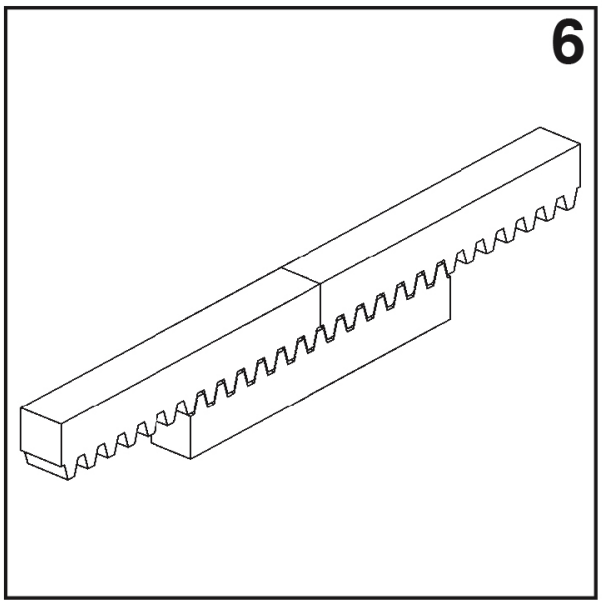
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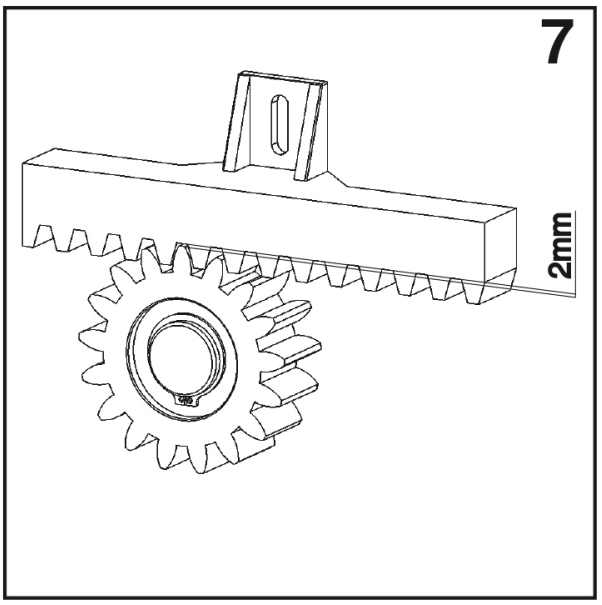
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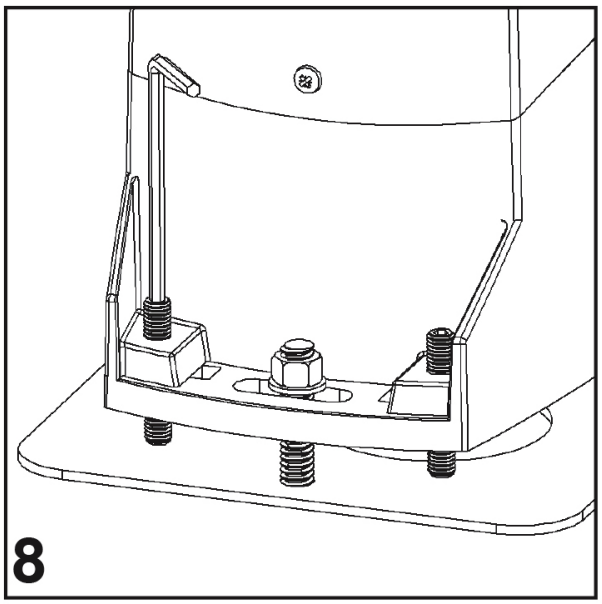
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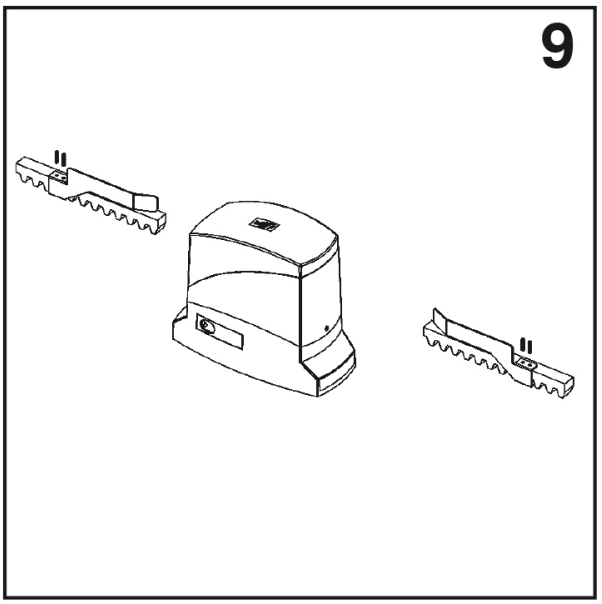
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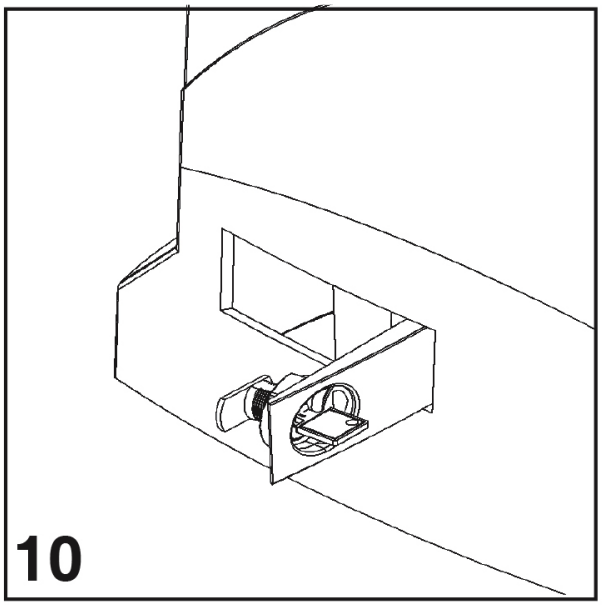
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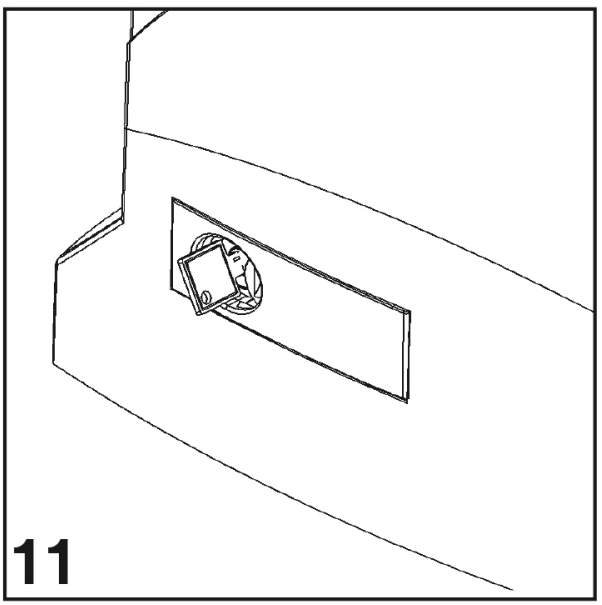
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# 1. General safety warnings



## 1.1 - Safety warnings

⚠ **CAUTION!**
**This manual contains important instructions and warnings for personal safety. Wrong installation can cause serious injuries.**
Before starting work read all the manual carefully. If in doubt, stop installation and ask the King-Gates Assistance Department for clarifications.

⚠ **CAUTION!**
**According to the most recent European legislation, the realisation of an automatic door or gate must comply with the regulations of Directive 2006/EC/42 (Machine Directive) and in particular, standards EN 12453; EN 12635 and EN 13214-1, which declare the presumed conformity of the automation.**

**In consideration of this, all the installation, connection, inspection and maintenance operations of the product must be performed exclusively by a qualified and competent technician!**

⚠ **CAUTION!**
**Important instructions: keep this manual for any possible future requirement for maintenance and disposal of the product.**

## 1.2 - Warnings for installation

- Before installing check if this product is suited to automating your gate or door. If unsuitable, DO NOT proceed with the installation.
- Include a disconnection device in the power supply system with an opening distance between the contacts to permit full disconnection in the conditions dictated by the category of surcharge III.
- All the installation and maintenance operations must occur with the automation disconnected from the electrical power supply. If the disconnection device of the power supply is not visible from the area where the automatism is located, before starting the work it is necessary to attach a sign with the text “CAUTION! MAINTENANCE IN PROGRESS” on the disconnection device.
- During installation handle the automatism with care avoiding crushing, knocks, falls or contact with liquids of any kind. Do not place the product near sources of heat, or expose it to naked flames. All these activities can damage and cause malfunctions or dangerous situations. If this occurs, stop the installation immediately and contact the King-Gates Assistance Department.
- Do not make alterations to any part of the product. Operations which are not permitted will cause only malfunctions. The manufacturer declines any liability for damage caused by arbitrary alterations to the product.
- Check there are no trapping points towards fixed parts when the leaf of the gate is in the maximum Open position, if necessary protect these parts.
- The push button control on the wall must be positioned in sight of the automation, away from the moving parts, at a minimum height of 1.5 m from the ground and it must not be accessible to the public.
- The product packaging material must be disposed of respecting the local regulations in force.

## 1.3 - Warnings

- The product should not be used by people (including children) with physical, sensory or mental disabilities, or lacking the necessary experience or knowledge, unless they are supervised by someone responsible for their safety, or have been fully trained on its use.
- Children playing nearby the automation system should be kept under constant supervision to prevent them from tampering with it.
- Do not let children play with the fixed controls. Keep remote control devices away from the reach of children.
- When cleaning the surface of the product only use a soft damp cloth. Only use water, without detergents or solvents.

## 1.4 - Preliminary control

Before installing the product, read carefully the instructions whic provide guidelines about safety, installment, use and maintenance.

- Ascertain the solidity and appropriateness of the gate’s frame.
- Ascertain the compatibility of the gate with the selected gear-motor.
- Ascertain the good balance of the gate.
- Ascertain the presence and good working condition of stopping devices.
- Ascertain that the gear-motor and the accessories are fixed on stable surfaces, protected from flooding and being hit.
- Ensure an easy and safe access to the manual release system.

**King Gates declines all responsibility for damage to persons or things that occurred due to causes not directly attributable to the characteristics of the product and failure to comply with the installation procedures in accordance with current regulations.**

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# 2. Models

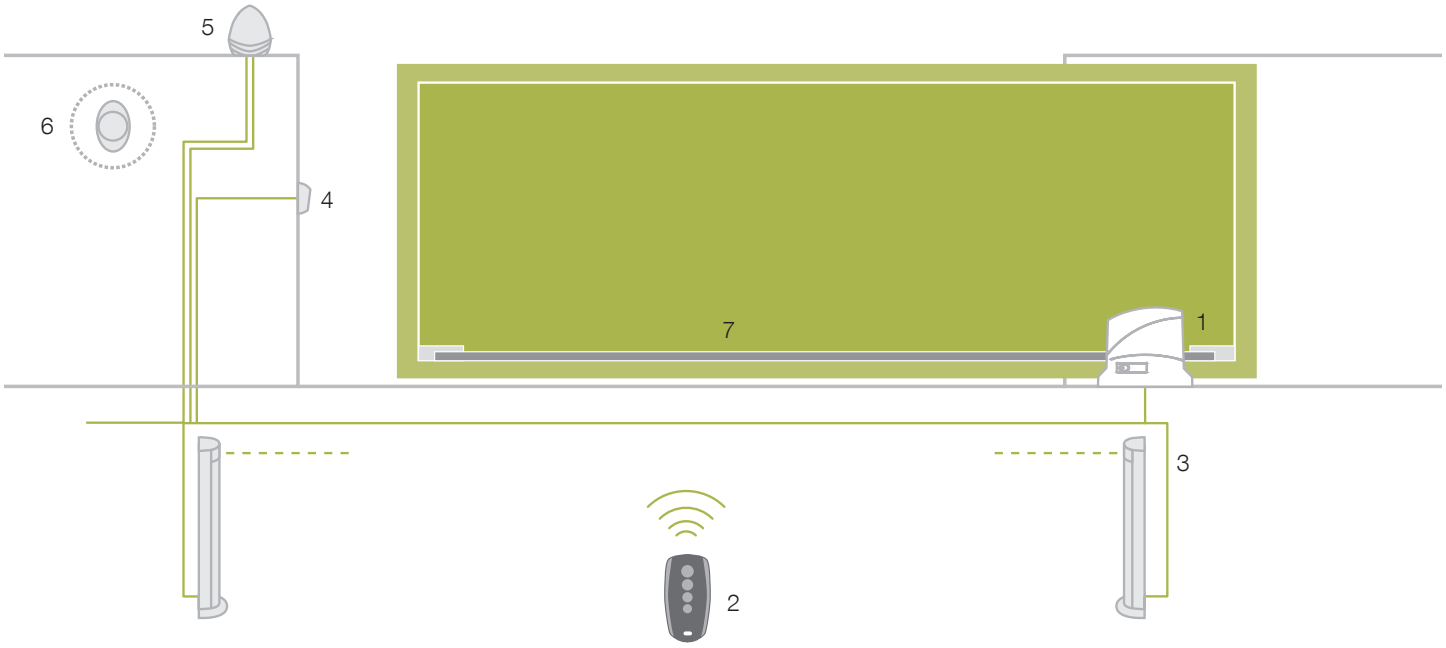
| Code | Description |
|---|---|
| DYNAMOSN24/400 | Irreversible 24 Vdc, incorporate control unit and radio receiver 433.92 MHz, max 400kg |
| DYNAMOSF24/600 | Irreversible 24 Vdc, incorporate control unit and radio receiver 433.92 MHz, max 600kg |
| DYNAMOS24/1000 | Irreversible 24 Vdc, incorporate control unit and radio receiver 433.92 MHz, max 1000kg |
| DYNAMOS1000 | Irreversible 230 Vac, incorporate control unit and radio receiver 433.92 Mhz, max 1000 kg |

# 3. Technical data

| Code | DYNAMOSN24/400 | DYNAMOSF24/600 | DYNAMOS24/1000 | DYNAMOS1000 |
|---|---|---|---|---|
| Mains power supply (Vac 50 Hz) | 230 | | | |
| Motor supply (Vac 50 Hz / Vdc) | 24 Vdc | | | 400 |
| Maximum power draw (W) | 250 | 375 | 400 | 400 |
| Speed (m/s) | 0,34 | 0,34 | 0,25 | 0,17 |
| Force max (N) | 400 | 600 | 850 | 850 |
| Working cycle (%) | 90 | | 80 | 30400 |
| Protection level (IP) | 44 | | | |
| Operating temperature (°C) | -20 ÷ +55 | | | |
| Weight (kg) | 9 | 11 | 11 | 12 |
| Operator dimensions (mm) | 325 x 185 x 274 h | | | |

# 4. Basic installation






**1.** Dynamos gear motor
**2.** Transmitter
**3.** Column photocells
**4.** Photocells
**5.** Flashing light
**6.** Key or digital selector
**7.** Rack

| LENGTH OF THE CABLE | < 10 metres | from 10 to 20 metres | from 20 to 30 metres |
|---|---|---|---|
| Power supply 230V | 3G x 1,5 $mm^2$ | 3G x 1,5 $mm^2$ | 3G x 2,5 $mm^2$ |
| Photocells (TX) | 2 x 0,5 $mm^2$ | 2 x 0,5 $mm^2$ | 2 x 0,5 $mm^2$ |
| Photocells (RX) | 4 x 0,5 $mm^2$ | 4 x 0,5 $mm^2$ | 4 x 0,5 $mm^2$ |
| Key switch | 2 x 0,5 $mm^2$ | 2 x 0,5 $mm^2$ | 2 x 0,5 $mm^2$ |
| Flashing light | 2 x 0,5 $mm^2$ | 2 x 0,5 $mm^2$ | 2 x 0,5 $mm^2$ |
| Antenna (integrated into the flashing light) | RG58 | RG58 | RG58 |

EN

# 5 - Installation

Read the instructions with care before installing the product.
The producer disclains all responsibility for any damage or bad functioning caused by non-osservance of the instructions or bad connection that may result in poor safety and functioning of the gear-motor.

## 5.1 Plate fixing

Tighten the two foundation tie-beans on the plate with the two M10 nuts (pic.2).
In accordance with the size, fix the plate on a concrete base of adeguate dimension, complying with fixing distances which have to be vertical and parallel to the gate.
Arrange one or more sheaths for electric cables (pic.3).
Once the base has hardened, loose the nuts, place the gear-motor on the foundation plate ascertaining it is parallel to the gate, and gently tighten the two nuts provided (pic.4).

## 5.2 Rack fixing

Set the gear-motor on manual functioning (pic.10).
Wide open the gate's door. Place the rack, place the first element on the pinion and fix it with M6 screws to the gate (pic.5).
Move the door manually and repeat the procedure with the other elements using a distance spacer to ensure the correct position from the rack (pic.6).
It is advisable to leave 2mm between the rack the gear to avoid the gate resting on the gear-motor (pic.7).

## 5.3 Final adjustment

For the final height adjustment between the motor and the rack, use the 4 screws located on the external sides for a height up to 15mm (pic.8). The final fixing of the gear-motor is done by tightening the 2 nuts placed on the foundation tie/beans.

## 5.4 Stopping stirrups installing

Move the door to open/close position. Fix the left and right stop-stirrups on the rack with the screws provided, considering that when stopping, the gate slides for 2/3 cm more after the limit switch intervenes (pic.9).Set the motor authomatic functioning (pic.11).

# 6 - Manual control

⚠ **ATTENTION: before operating the manual release disconnect the power. The motor is anyway disconnected during the release, thanks to the presence of a safety micro-switch.**

Manual control has been thought for manual opening of the gate in case of power-cut or motor breakdown (pic.10).

- Operate the manual release moving back the key hole cover.
- Insert the key in the cylinder lock and turn it of 90° clockwise direction.
- Pull the lever till it is perpendicular to the gear-motor.

Automation restore (pic.11):

- Bring back the lever in the original position.
- Insert the key in the cylinder lock and turn it of 90° anticlockwise direction

# 7 - Testing the automation

In order to guarantee maximum safety, this is the most important phase in the realization of the automation. The test can also be used as a periodic check of the devices that make up the automatism.
**The testing of the entire system must be performed by expert and qualified personnel** who must take responsibility for the required tests, according to the present risk and verify compliance with the provisions of laws, regulations and standards, and in particular with all the requirements of the EN12453 standard which sets out the test methods to verify gate automatisms.

**Testing**
Every individual component of the automatism, for example safety edges, photocells, emergency stop, etc. requires a specific testing phase; for these devices, the procedures indicated in the respective instruction manuals must be carried out. To test the gear motor, carry out the following operations:

1. Check that all the provisions of this manual and in particular chapter 1 have been strictly adhered to;
2. Release the gear motor;
3. Verify that it is possible to manually move the opening and closing leaf with a force not exceeding 390 N (about 40kg);
4. Lock the gear motor and connect the power supply;
5. Using the control or stop devices provided (key selector, control buttons or radio transmitters), carry out tests to open, close and stop the gate and verify that its behaviour corresponds to what was expected;
6. Check one by one that all the safety devices present in the system (photocells, safety edges, emergency stop, etc.) work correctly; and that the gate's behaviour corresponds to what is expected;
7. Order a closing manoeuvre and check the force of the impact of the leaf against the stop of the mechanical limit switch. If necessary, try to relieve the pressure by finding an adjustment that gives better results;
8. If the dangerous situations caused by the movement of the leaf have been safeguarded by limiting the impact force, this force must be measured according to the provisions of the EN 12453 standard;

**Note** – The gear motor has no torque adjustment devices, therefore, this adjustment is entrusted to the control unit.

**Commissioning**
Commissioning can only take place after all the testing phases of the gear motor and the other devices have been successfully completed. For commissioning, refer to the instruction manual of the control unit.

⚠ **IMPORTANT – Partial or "temporary" commissioning is prohibited.**

# 8 - Maintenance

Regular maintenance is required to maintain a constant level of safety and to guarantee the maximum life of the entire automation.
Maintenance must be carried out in full compliance with the safety requirements of this manual and in accordance with the applicable laws and regulations. For the gear motor, scheduled maintenance is required within a maximum of 6 months.

**Maintenance operations:**

1. Disconnect all power sources.
2. Check the state of deterioration of all the materials that make up the automation with particular attention to the erosion or oxidation of the structural parts; replace the parts that do not give sufficient guarantees.
3. Check that screw connections are tightened properly.
4. Check the moving parts for wear and replace worn parts as required.
5. Reconnect the power supply sources and carry out all the tests and checks provided for in chapter 7.

For other devices in the system, refer to their instruction manuals.

# 9 - Disposal

**This product is an integral part of the automation, and therefore must be disposed of together with it.**
As for the installation operations, even at the end of the product life, dismantling operations must be carried out by qualified personnel.
This product consists of various types of materials: some can be recycled, others must be disposed of. Ask about the recycling or disposal systems required by the regulations in force in your area, for this category of product.

⚠ **Warning!** - some parts of the product may contain polluting or dangerous substances which, if dispersed in the environment, might cause harmful effects on both the environment and human health.

As indicated by the side symbol, it is forbidden to dispose of this product with household waste. Have it disposed of separately, according to the methods set out by the regulations in force in your country, or return the product to the seller when buying a new equivalent product.

⚠ **Warning!** - local regulations may provide for heavy penalties for the illegal disposal of this product.

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# 10 - EU declaration of conformity and declaration of incorporation of partly completed machine

**Declaration in accordance with Directives: 2014/35/UE (LVD); 2014/30/UE (EMC); 2006/42/CE (MD) ANNEX II, PART B**

The manufacturer V2 S.p.A., headquarters in Corso Principi di Piemonte 65, 12035, Racconigi (CN), Italy

Under its sole responsibility hereby declares that:
the partly completed machinery model(s):
DYNAMOSN24/400, DYNAMOSF24/600, DYNAMOS24/1000, DYNAMOS1000

Description: electromechanical actuator for sliding gates

- is intended to be installed on sliding gates, to create a machine according to the provisions of the Directive 2006/42/EC. The machinery must not be put into service until the final machinery into which it has to be incorporated has been declared in conformity with the provisions of the Directive 2006/42/EC (annex II-A).
- is compliant with the applicable essential safety requirements of the following Directives:

  **Directive 2014/35 / EU**: Directive 2014/35 / EU of the European Parliament and of the Council, of 26 February 2014, for the approximation of the laws of the Member States relating to the making available on the market of electrical equipment intended for use within certain limits of voltage

  **Directive 2014/30 / EU**: Directive 2014/30 / EU of the European Parliament and of the Council of 26 February 2014 on the harmonization of the laws of the Member States relating to electromagnetic compatibility (recast) Text with EEA relevance

  **Directive 2006/42 / EC**: Directive 2006/42 / EC of the European Parliament and of the Council of 17 May 2006 relating to machinery and amending Directive 95/16 / EC

  **Directive 2014/53 / EU**: Directive 2014/53 / EU of the European Parliament and of the Council of 16 April 2014 on the approximation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5 / EC Text with relevance EEE

  **Directive 2015/863 / EC**: COMMISSION DELEGATED DIRECTIVE (EU) 2015/863 / EC of 31 March 2015 amending Annex II of Directive 2011/65 / EC of the European Parliament and of the Council as regards the list of substances check

The following technical standards have been applied:
EN 61000-6-2:2019, EN 61000-6-3:2007 + A1:2011, EN 55014-1:2017, EN 55014-2:2015, EN 61000-3-2:2014, EN 61000-3-3:2013, EN 301 489-1 V2.2.0 (2017-03), EN 301 489-3 V2.1.1 (2017-03)
IEC 60335-2-103:2015, AMD1:2017, AMD2:2019 in conjunction with IEC 60335-1:2010, COR1:2010, COR2:2010, AMD1:2013, COR1:2014, AMD2:2016, COR1:201
IEC 62368-1: 2018 EN IEC 62368-1:2020+A11:2020

The manufacturer undertakes to transmit to the national authorities, upon reasoned request, the relevant information on the "partly completed machine", while preserving its intellectual property rights.

It is specified that the "partly completed machine" must not be put into service until the final machine, in which it will be integrated, has in turn been declared compliant with the provisions of Directive 2006/42 / EC.

The relevant technical documentation is available at the national authorities' request after justifiable request to:
V2 S.p.A. Corso Principi di Piemonte 65, 12035, Racconigi (CN), Italy

The person empowered to draw up the declaration and to provide the technical documentation:
***Lauro Buoro***
Legal representative of V2 S.p.A.
Racconigi, 01/11/2022

**+39 0172 1812574**

**Technical support**
Monday/Friday 8.30-12.30 ; 14-18
(UTC+01:00 time)

ZIS571 - 15/11/2022

## Dati dell'installatore / *Installer details*

**Azienda / *Company*** _____

**Località / *Address*** _____

**Provincia / *Province*** _____

**Recapito telefonico / *Tel.*** _____

**Referente / *Contact person*** _____

**Timbro / *Stamp***

## Dati del costruttore / *Manufacturer's details*

KINGGATES

**Brand of V2 S.p.A.**
Corso Principi di Piemonte 65/67 - 12035 RACCONIGI CN (ITALY)
info@king-gates.com - www.king-gates.com

CE