Istruzioni ed avvertenze per l'installazione e l'uso
Instructions and warnings for installation and use
Instructions et avertissements pour l'installation et l'usage
Anleitungen und Hinweise zu Installation und Einsatz
Instrucciones y advertencias para su instalación y uso
Instruções e advertências para a instalação e utilização
Instrukcje i zalecenia dotyczące instalacji i użytkowania

STAR3024

Gear motor for hinged gates
Motoriduttore per cancelli a battente
Motoréducteur pour portails à battants
Motorreductor para cancelas batientes
Antriebe für Drehtore
Motorredutores para portões de batente
Motoreduktor do bram skrzydłowych

Management System ISO 9001

www.tuv.com ID 9105043769

EN

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1 - SAFETY WARNINGS

⚠ ATTENTION !

ORIGINAL INSTRUCTIONS - important safety instructions. Follow the instructions since incorrect installation can lead to severe inquiry! Save these instructions.

Read the instructions carefully before proceeding with installation.

The design and manufacture of the devices making up the product and the information in this manual are compliant with current safety standards. However, incorrect installation or programming may cause serious injury to those working on or using the system. Compliance with the instructions provided here when installing the product is therefore extremely important.

If in any doubt regarding installation, do not proceed and contact the Key Automation Technical Service for clarifications.

Under European legislation, an automatic door or gate system must comply with the standards envisaged in the Directive 2006/42/EC (Machinery Directive) and in particular standards; EN 12453; EN 12635 and EN 13241-1, which enable declaration of presumed conformity of the automation system.

Therefore, final connection of the automation system to the electrical mains, system testing, commissioning and routine maintenance must be performed by skilled, qualified personnel, in observance of the instructions in the “Testing and commissioning the automation system” section.

The aforesaid personnel are also responsible for the tests required to verify the solutions adopted according to the risks present, and for ensuring observance of all legal provisions, standards and regulations, with particular reference to all requirements of the EN 12453 standard which establishes the test methods for testing door and gate automation systems.

⚠ ATTENTION !

Before starting installation, perform the following checks and assessments:

ensure that every device used to set up the automation system is suited to the intended system overall. For this purpose, pay special attention to the data provided in the “Technical specifications” section. Do not proceed with installation if any one of these devices is not suitable for its intended purpose;

check that the devices purchased are sufficient to guarantee system safety and functionality;

perform a risk assessment, including a list of the essential safety requirements as envisaged in Annex I of the Machinery Directive, specifying the solutions adopted. The risk assessment is one of the documents included in the automation system’s technical file. This must be compiled by a professional installer.

Considering the risk situations that may arise during installation phases and use of the product, the automation system must be installed in compliance with the following safety precautions:

never make modifications to any part of the automation system other than those specified in this manual. Operations of this type can only lead to malfunctions. The manufacturer declines all liability for damage caused by unauthorised modifications to products;

if the power cable is damaged, it must be replaced by the manufacturer or its after-sales service, or in all cases by a person with similar qualifications, to prevent all risks;

do not allow parts of the automation system to be immersed in water or other liquids. During installation ensure that no liquids are able to enter the various devices; should this occur, disconnect the power supply immediately and contact a Key Automation Service Centre. Use of the automation system in these conditions may cause hazards;

never place automation system components near to sources of heat or expose them to naked lights. This may damage system components and cause malfunctions, fire or hazards;

⚠ ATTENTION !

The drive shall be disconnected from its power source during cleaning, maintenance and when replacing parts. If the disconnect device is not in a visible location, affix a notice stating: “MAINTENANCE IN PROGRESS”:

connect all devices to an electric power line equipped with an earthing system;

the product cannot be considered to provide effective protection against intrusion. If effective protection is required, the automation system must be combined with other devices;

the product may not be used until the automation system “commissioning” procedure has been performed as specified in the “Automation system testing and commissioning” section;

the system power supply line must include a circuit breaker device with a contact gap allowing complete

disconnection in the conditions specified by class III overvoltage;

use unions with IP55 or higher protection when connecting hoses, pipes or cable glands;

the electrical system upstream of the automation system must comply with the relevant regulations and be constructed to good workmanship standards;

this appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved;

before starting the automation system, ensure that there is no-one in the immediate vicinity;

before proceeding with any cleaning or maintenance work on the automation system, disconnect it from the electrical mains;

special care must be taken to avoid crushing between the part operated by the automation system and any fixed parts around it;

children must be supervised to ensure that they do not play with the equipment;

that the drive cannot be used with a driven part incorporating a wicket door unless the drive can only be operated with the wicket door in the safe position;

install any fixed control at a height of at least 1,5m and within sight of the door but away from moving parts;

after installation, ensure that parts of the door do not extend over public footpaths or roads;

when the appliance is provided with a separate stop button, that stop button shall be unambiguously identifiable;

install the automation exclusively on gates operating on flat surfaces, that is, they are not installed on an up or down tilt;

install exclusively on gates that are sturdy enough and suitable to withstand the loads generated by the automation itself;

do not subject the automation to direct jets of water, such as sprinklers or pressure washers;

if the automation system exceeds 20 kg in weight, it must be handled using safety lifting devices (IEC 60335-2-103: 2015);

provide appropriate safety protections in order to avoid crushing and becoming trapped between the moving guided part and any surrounding fixed elements;

make sure that any protection or safety devices, in addition to the manual release, work correctly;

place the automation identification plate at a clearly visible point;

keep the manuals and technical files of all the devices used to create the automation;

at the end of the automation installation it is advisable to hand over the manuals relating to the warnings intended for the end user;

⚠ ATTENTION !

Frequently examine the installation for imbalance where applicable and signs of wear or damage to cables, springs and mounting. Do not use if repair or adjustment is necessary.

⚠ ATTENTION !

The automation system component packaging material must be disposed of in full observance of current local waste disposal legislation.

Key Automation reserves the right to amend these instructions if necessary; they and/ or any more recent versions are available at www.keyautomation.it.

2 - PRODUCT OVERVIEW

2.1 - Description of the product

The STAR gear motors are destined to be installed in systems for the automation of gates with hinged doors.
The STAR gear motors have been designed and constructed to be fitted onto hinged doors within the weight limits indicated in the technical specifications table.
The use of gear motors for applications which differ from those indicated above is prohibited.

2.2 - Technical characteristics

TECHNICAL DATA		STAR3024
Speed	cm/s	2,5
Thrust Force	N	1400
Working cycle	%	80
Opening time at 90°	sec	adjustable
Control unit		CT20224
Power supply	Vac (Vdc)	(24)
Absorption	A	3,5
Engine power	W	85
Degree of protection	IP	54
Dimensions (L - P - H)	mm	796 - 115 - 177
Weight	Kg	3,2
Operating temperature	°C	-20°+55
Leaves maximum weight	Kg	400

3 - PRELIMINARY CHECKS

Before installing this product, verify and check the following steps:

- Check that the gate or door are suitable for automation

- The weight and size of the gate or door must be within the maximum permissible operating limits specified in Fig. 2

- Check the presence and strength of the security mechanical stops of the gate or door

- Check that the mounting area of the product is not subject to flooding

- Conditions of high acidity or salinity or proximity to heat sources could cause malfunction of the product

- Extreme weather conditions (for example the presence of snow, ice, high temperature range, high temperatures) may increase the friction and therefore the force required for the handling and initial starting point may be higher than under normal conditions.

- Check that the manual operation of gate or door is smooth and friction-free and there is no risk of derailment of the same

- Check that the gate or door are in equilibrium and stationary if left in any position

- Check that the power line to supply the product is equipped with proper grounding safety and protected by a magnetothermal and differential security device

- Provide the power system with a disconnecting device with a gap of contacts enabling full disconnection under the conditions dictated by the overvoltage category III.

- Ensure that all materials used for the installation comply with current regulations

4 - PRODUCT INSTALLATION

4.1 - Installation

Before proceeding with the installation, check the integrity of the product and that all components are present in the package.

Also make sure that the mounting area of the gear motor is compatible with the dimensions (Fig.1).

Ensure that leaf travel is limited, on opening and closing, by mechanical stops securely anchored to the ground.

Check the permitted opening angle, based on the mounting points of the brackets with the graph (Fig.4).

Fig.3 shows a typical installation:

- Gear motors
- Photocells
- Columns for photocells
- Flashing light with antenna
- Key switch or digital keypad
- Control unit

Installing the rear fixing bracket

The fixing position of the rear bracket is determined according to the graph (Fig. 4).

Important: installations where the values of “A” and “B” (Fig. 5) are as similar to each other as possible are preferred.

If necessary, cut the rear bracket (Fig. 6) to obtain the value “B”, then weld the fixing bracket to the wall.

Secure the bracket to the wall using welding, screws or bolts (not included).

Installing the front fixing bracket

The front bracket must be fixed to the door according to dimension “E” (Fig.5).

Installing the gear motor

Place the gear motor against the rear bracket and insert the fixing screw.

Insert the pin of the sliding bracket into the bush of the front bracket and secure it with the screw and washer provided.

Tighten the screw on the rear bracket previously mounted with the nut.

After the installing operations, release the operator and ensure that the gate opens smoothly with no stiff points and that it stops on the mechanical travel stops obtaining the leaf openings determined by the fitting position of the operator with reference to Fig. 4.

⚠ ATTENTION !

Do not exceed the leaf opening determined by the fitting position of the operator with reference to Fig. 4, otherwise the operator may be irreversibly damaged!

4.2 - Electrical connections

Insert the supply cable to the terminal. Connect the wires of the supply cable to the terminal following the electrical drawing in Fig. 9.

5 - TESTING AND COMMISSION THE AUTOMATION

The testing of the system must be performed by qualified technicians who must perform the tests required by relevant legislation related to risks, ensuring compliance with the provisions of the regulations, in particular the EN12445 standard, which specifies the testing methods for the automation of doors and gates.

5.1 - Testing

All system components must be tested following the procedures outlined in the respective instruction manuals.

Check that they meet the guidelines in Chapter 1 - Safety warnings

Check that the gate or door can move freely once the automation is unlocked, and that they are in equilibrium and stationary if left in any position.

Check the correct operation of all connected devices (photocells, sensitive edges, emergency buttons, etc.), testing the opening, closing and stopping of the gate or door via the connected control devices (transmitters, buttons, switches).

Carry out measurements of the impact force, as prescribed by standard EN12445 adjusting the functions of speed, motor force and deceleration of the unit if the measurements do not give the desired results until you find the right setting.

5.2 - Commissioning

Following the successful testing of all (and not just some) devices in the system you can proceed with the commissioning.

You must prepare, and keep for 10 years, the technical file of the system with the wiring diagram, drawing or photo of the system, risks analysis and solutions adopted, manufacturer declaration of conformity of all devices connected, instruction manual of each device and maintenance schedule of the system.

Fix on the gate or door a plaque indicating the automation data, the name of the person responsible for the commissioning, the serial number and year of construction, the CE mark.

Attach a plaque indicating the steps required to manually unlock the system.

Implement and deliver to the end user the declaration of conformity, the instructions and warnings for use for the end user and the maintenance schedule of the system.

Make sure the user understands proper automatic, manual and emergency operation of the automation.

Inform the end user in writing of the dangers and risks still present.

6 - IMAGES

Fig. 1 **IT - Dimensioni d' ingombro**
EN - Space dimensions
DE - Abmessungen
ES - Dimensiones
FR - Dimensions d'encombrement
PT - Dimensões globais
PL - Wymiary

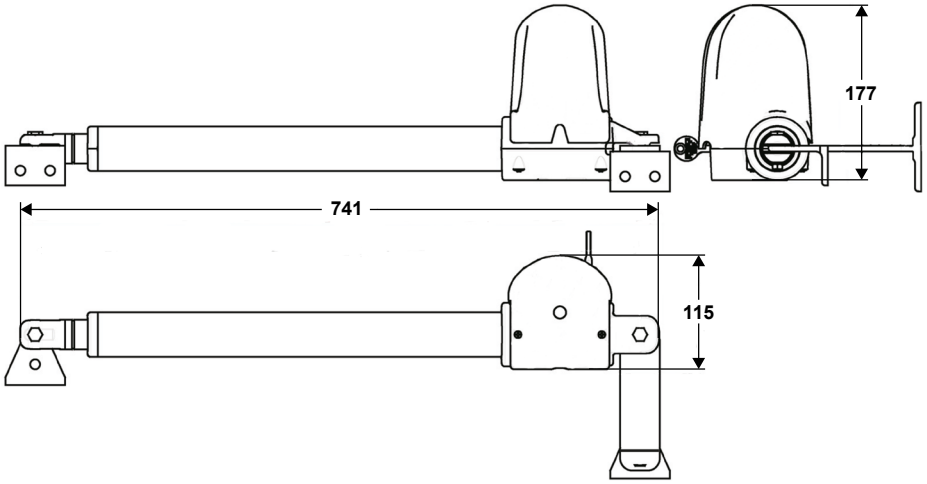
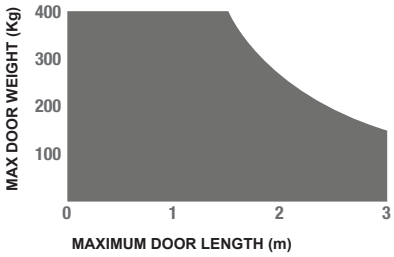


Fig. 2 **IT - Limiti di impiego**
EN - Use limitations
DE - Einsatzgrenzen
ES - Límites de uso
FR - Limites d'utilisation
PT - Limites de uso
PL - Ograniczenia użytkowania



KG
IT - Peso massimo dell' anta del cancello
EN - Maximum weight of the gate door
FR - Poids maximum du battant du portail
ES - Peso máximo de la puerta de la cancela
DE - Maximales Gewicht des Torflügels
PT - Peso máximo do painel do portão
PL - Waga maksymalna skrzydła bramy

m
IT - Lunghezza massima dell' anta del cancello
EN - Maximum length of the gate door
FR - Longueur maximum du battant du portail
ES - Longitud máxima de la puerta de la cancela
DE - Maximale Länge des Torflügels
PT - Comprimento máximo do painel do portão
PL - Długość maksymalna skrzydła bramy

Fig. 3 **IT - Installazione tipica**
EN - Typical Installation
DE - Typische Installation
ES - Instalación típica
FR - Installation type
PT - Instalação típica
PL - Typowy sposób instalacji

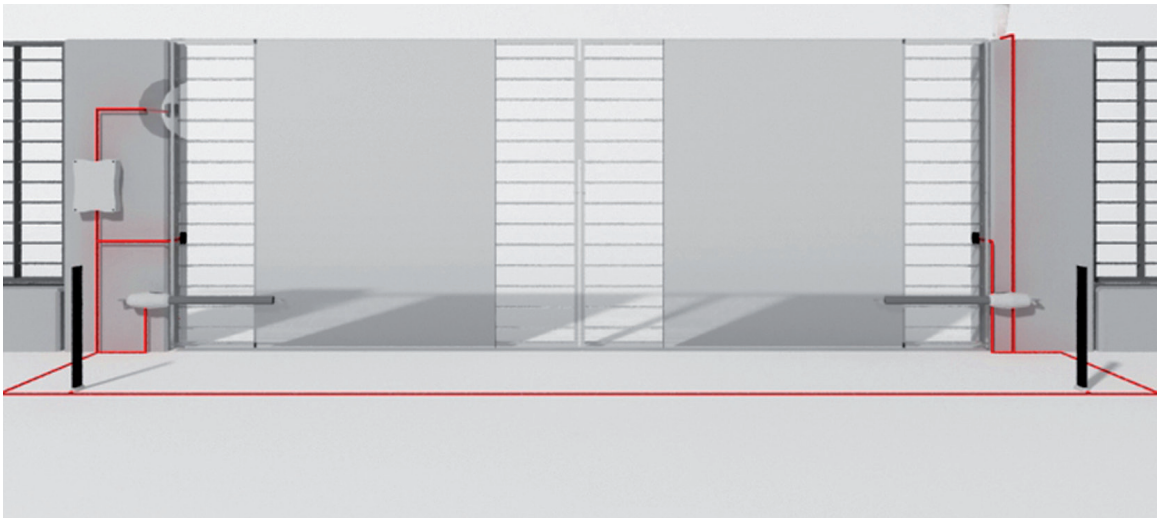


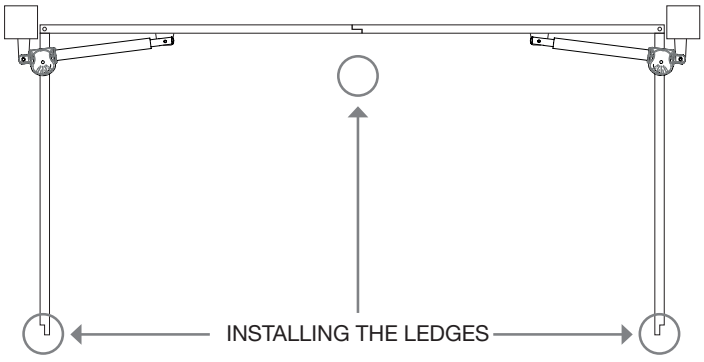
Fig. 4 **IT - Rappresentazione quote**
EN - Quotes representation
DE - Darstellung der Werte
ES - Representación cuotas
FR - Représentation hauteurs
PT - Quotas de representação
PL - Przedstawienie wartości

	OPENING ANGLE TABLE														
B	280	90°													
	260	90°	94°	90°											
	240	90°	95°	99°											
	220	90°	95°	100°	102°	93°									
	200	90°	96°	101°	106°	101°	94°								
	180	90°	96°	102°	107°	112°	101°	95°	91°						
	160	90°	97°	103°	109°	114°	110°	101°	96°	92°					
	140	90°	98°	105°	111°	117°	121°	108°	101°	97°	93°	90°			
	120	90°	99°	107°	114°	120°	125°	116°	107°	102°	97°	94°	92°	90°	
	100	90°	101°	109°	117°	123°	128°	124°	113°	107°	102°	98°	95°	93°	91°
		80	100	120	140	160	180	200	220	240	260	280	300	320	340
		A													

	POSITION FRONT CLAMP D [mm]														
B	280	995													
	260	998	978	958											
	240	1002	982	962											
	220	1005	985	965	945	925									
	200	1007	987	967	947	927	907								
	180	1009	989	969	949	929	909	889	869						
	160	1011	991	971	951	931	911	891	871	851					
	140	1013	993	973	953	933	913	893	873	853	833	813			
	120	1014	994	974	954	934	914	894	874	854	834	814	794	774	
	100	1095	995	975	955	935	915	895	875	855	835	815	795	775	755
		80	100	120	140	160	180	200	220	240	260	280	300	320	340
		A													

Position of the Front Clamp E = 1095 mm (always)

Fig. 5 **IT - Grafico angolo di apertura**
EN - Opening angle graph
DE - Zeichnung zum Öffnungswinke
ES - Gráfico ángulo de apertura
FR - Graphique angle d'ouverture
PT - Gráfico ângulo de abertura
PL - Wykres kąta otwarcia



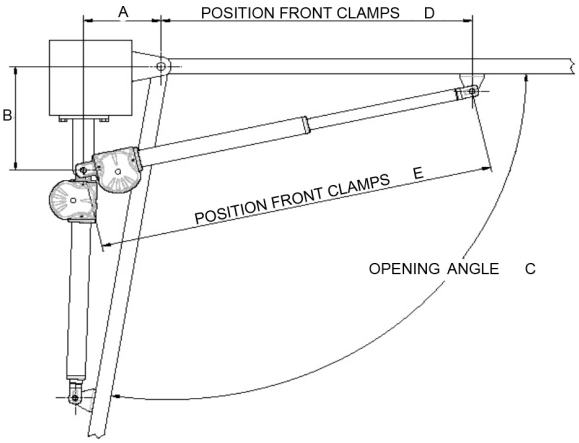


Fig. 6 **IT - Taglio staffa posteriore**
EN - Cutting the rear bracket
DE - Schneiden des hinteren Bügels
ES - Corte estribo posterior
FR - Coupe du chevron arrière
PT - Tamanho suporte posterior
PL - Przecięcie obejmy tylnej

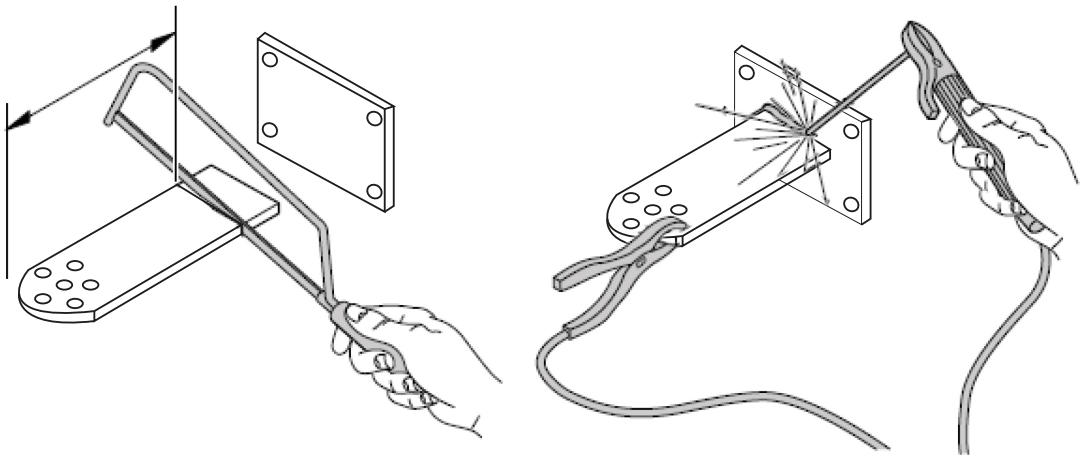


Fig. 7 **IT - Fissaggio staffa anteriore**
EN - Attaching the front bracket
DE - Befestigung des vorderen Bügels
ES - Fijación del estribo anterior
FR - Fixation du chevron avant
PT - Fixação suporte anterior
PL - Mocowanie obejmy przedniej

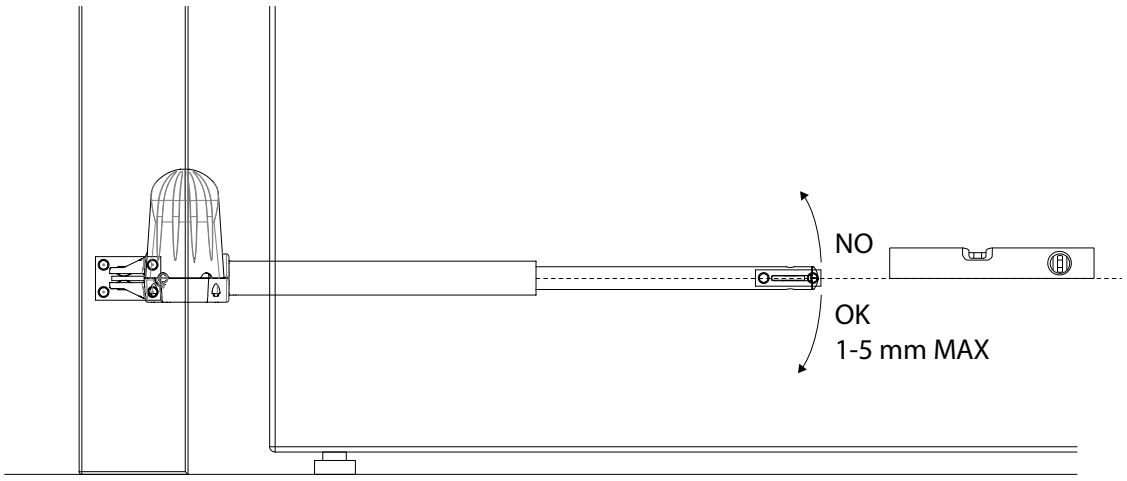


Fig. 8 **IT - Sblocco del motoriduttore**
EN - Gearmotor release
DE - Entriegeln des Getriebemotors
ES - Desbloqueo del motorreductor
FR - Déblocage du motoréducteur
PT - Desbloqueio do motorredutor
PL - Odblokowanie motoreduktora

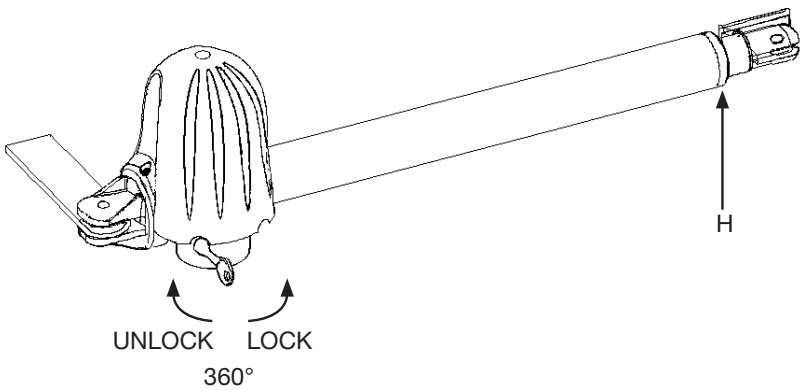
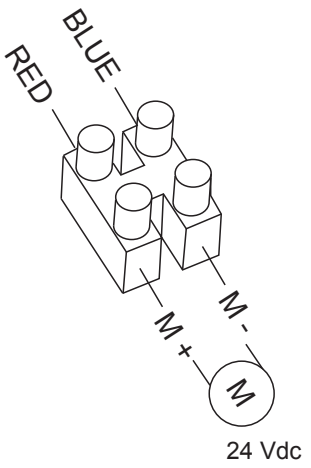


Fig. 9 **IT - Connessioni elettriche**
EN - Electrical connection
DE - Elektrische Anschlüsse
ES - Conexiones eléctricas
FR - Connexions électriques
PT - Conexões eléctricas
PL - Połączenia elektryczne



NOTE

DICHIARAZIONE DI INCORPORAZIONE DI QUASI-MACCHINA

DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY

Il sottoscritto Nicola Michelin, Amministratore Delegato dell'azienda
The undersigned Nicola Michelin, General Manager of the company

Key Automation srl, Via Meucci, 23 - 30027 San Donà di Piave (VE) – ITALIA

dichiara che il prodotto tipo:
declares that the product type:

14A
Centrale di comando modulare a 24 Vdc
24 Vdc modular control unit

Models:
Models:

14AB, 14AB2, 14AB2F, 14AB2L, 14AB2FL, MA24, MA24F, PO24, PO24R

È conforme a quanto previsto dalle seguenti direttive comunitarie:
Is in conformity with the following community (EC) regulations:

Direttiva macchine / *Machinery Directive* 2006/42/EC
Direttiva compatibilità elettromagnetica / *EMC Directive* 2015/30/EU
Direttiva bassa tensione / *Low voltage Directive* 2014/35/EU
Direttiva RoHS / *RoHS Directive* 2011/65/UE

Secondo quanto previsto dalle seguenti norme armonizzate:
In accordance with the following harmonized standards regulations:

EN 55014-1:2006 + A1:2009 + A2:2011
EN 55014-2:1997 + A1:2001 + A2:2008
EN 62233:2008
EN 60335-1:2012 + A1 + A11, EN 60335-2-103:2015
EN 61000-3-2:2014, EN 61000-3-3:2013
EN 61000-6-2:2005, EN 61000-6-3:2007
EN 60950-1:2006: + A11:2009 + A1:2010 + A12:2011 + A2:2013

Dichiara che la documentazione tecnica pertinente al prodotto è stata redatta conformemente a quanto previsto dalla direttiva 2006/42/CE Allegato VII parte B e verrà fornita a fronte di una richiesta adeguatamente motivata dalle autorità nazionali.
Declares that the technical documentation is compiled in accordance with the directive 2006/42/EC Annex VII part B and will be transmitted in response to a reasoned request by the national authorities.

Dichiara altresì che non è consentita la messa in servizio del prodotto finchè la macchina, in cui il prodotto è incorporato, non sia stata dichiarata conforme alla direttiva 2006/42/CE.
He also declares that 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 2006/42/EC.

San Donà di Piave (VE), 12/04/17

Amministratore Delegato
General Manager
Nicola Michelin

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