

VIPER

Motoriduttore sezionale per automazione garage
Opener for sectional and up and over garage door
Motoréducteur sectionné pour automatisation garage
Motorreductor seccional para automatismo garaje
Moto-redutor seccional para amolação garagem
Przekrojowa przekładnia zwalniająca do automatyki garażowej
Sektionalantrieb für Garagentorautomation

1 - SAFETY WARNINGS

WARNING - for the safety of people, it is important to follow these instructions and save them for future use.

Read the instructions carefully before you start the installation.

The design and manufacture of the devices making up the product and the information contained in this manual comply with safety regulations. However, wrong installation and programming may cause serious physical injury to those who perform the work and those who will use the device. For this reason, during installation, it is important to carefully follow all instructions in this manual.

Do not proceed with the installation if you have doubts of any kind and contact Key Automation Customer Service for clarifications.

By the European legislation, the creation of the automation of a door or gate must comply with the rules laid down in Directive 2006/42/EC (Machinery Directive) and in particular, EN 12445; EN 12453; EN 12635 and EN 13241-1 standards, which allow the installer to declare the compliance of the automation.

In view of this, the final connections to the power supply of the automation, the system tests, its commissioning and maintenance must be performed by qualified and experienced personnel, according to the instructions in "Testing and commissioning of the automation".

Moreover, the personnel shall also take responsibility to establish the tests related to the risks involved and verify compliance with the provisions of laws, rules and regulations: in particular, compliance with all requirements of standard EN 12445, which establishes methods of tests for the verification of the automations for doors and gates.

IMPORTANT - Before starting the installation, perform the following analysis and tests:

Ensure that the individual automation devices are suitable for the installation to be made. In this regard, check with particular attention the data contained in the "Technical data" section. Do not install if even one of the devices is not suitable for use.

Check whether the devices in the kit are sufficient to maintain safety and functionality.

Perform risk analysis, which must also include the list of essential safety requirements set out in Annex I of the Machinery Directive, indicating the solutions adopted. Risk analysis is one of the documents comprising the technical file of the automation. This must be completed by a professional installer.

Considering the hazards that may occur during installation and use of the product you need to install the automation observing the following precautions:

Do not make changes to any part of the automation, other than those specified in this manual. Operations of this type will only lead to malfunction. The manufacturer disclaims any liability for damage arising from products modified arbitrarily.

Keep the parts of the components from being immersed in water or other liquids. During the installation, ensure that no liquid penetrates into the devices.

If liquid spills into any part of the automation components, immediately disconnect the power supply and contact the Key Automation Customer Service. The use of the automation under these conditions can be dangerous.

Do not place the various components near sources of heat and do not expose them to open flame. These actions may damage them and cause malfunctions, fire or danger.

All operations requiring the opening of the protective cover of various automation components, must be performed with the control unit disconnected from the main supply. If the disconnection device is not visible, place a "MAINTENANCE IN PROGRESS" sign.

The control unit must be connected to a power supply line provided with grounding safety connection;

The product cannot be considered an effective system of protection against intrusion. If you want to protect yourself efficiently, you need to integrate the automation with other devices;

The product can be used only after the "commissioning" of automation has been made, as provided in paragraph "Testing and commissioning of the automation" ;

Provide the power system with a disconnecting device with a gap between contacts enabling full disconnection, under the conditions dictated by the overvoltage category III;

For the connection of pipes and conduit or guides, use pipefittings with IP55 degree of protection or higher;

The electric system upstream of the automation shall comply with current regulations and must be made according to the good industry practice;

It is recommended to use an emergency button to be installed near the automation (connected to the STOP input of the control board) so that you can immediately stop the gate or door in case of danger;

This device is not intended for use by persons (including children) whose physical, sensory or mental abilities are reduced, or who have lack of experience or knowledge, unless they have been able to benefit, through the intermediary of a person responsible for their safety, from supervision or instruction concerning use of the device;

Children should be supervised to make sure they do not play with the device;

WARNING - The packaging material of all components must be disposed in compliance with local regulations.

WARNING - The data and information provided in this manual are subject to change at any time without notice by Key Automation S.r.l.

2 - PRODUCT OVERVIEW

2.1 Description of the product




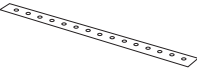
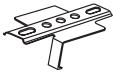
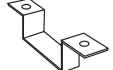
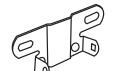
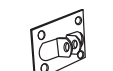






Viper is an electromechanical irreversible gear motor, suitable to automate up and over doors up to 14 m² and sectional doors up to 16 m².

Viper has a built-in encoder, control unit and receiver. The receiver has the possibility to select fix or rolling code. The rail is chain driven, pre-assembled in one or three pieces.

2.2 Composition

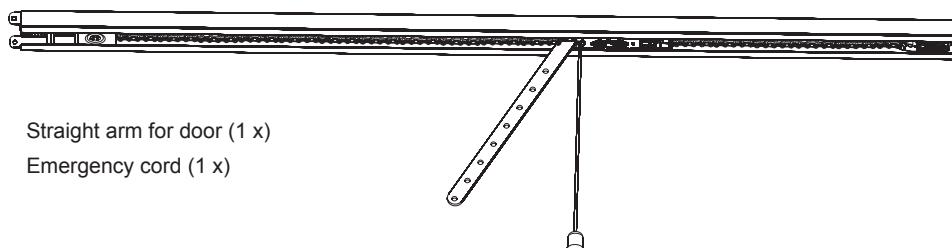
The system for garage door automation is composed of two boxes. One contains the package of the automation system; the other contains the guide assembly, as shown in the illustration below.

Automation system package

Characteristic	Name	Quantity
	Automation system	1
	Manual	1
	Curved arm for door	1
	Mounting clamp	2
	Support	1
	U bracket	3
	Support bracket	1
	Door bracket	1
Package of various fastening devices		
6x15 hex-head self-tapping screw	 (8x) 6x80 Screw with hex nut	 (1x)
8x25 Hinge pin	 (1x) 3x20 Split pin	 (1x) Lateral movement ring
6x80 Expansion plug	 (6x) 8x20 Screw with hex nut	 (4x)

Guide package

Pre-assembled guide



Guide (1 x) Straight arm for door (1 x)
 Chain (1 x) Emergency cord (1 x)
 Carriage (1 x)

2.3 Models and characteristics

CODE	DESCRIPTION	POWER	GUIDE
SEZ7U	for sectional doors up to 10 mq with motor 24 Vdc and central with integrated receiver	700Nm	pre-assembled chain rail 3320 mm in single piece
SEZ7	for sectional doors up to 10 mq with motor 24 Vdc and central with integrated receiver	700Nm	chain rail 3320 mm into three pieces with fast joints
SEZ12U	for sectional doors up to 16 mq with motor 24 Vdc and central with integrated receiver	1200Nm	pre-assembled chain rail 3320 mm in single piece
SEZ12	for sectional doors up to 16 mq with motor 24 Vdc and central with integrated receiver	1200Nm	chain rail 3320 mm into three pieces with fast joints
SEZ124	for sectional doors up to 16 mq with motor 24 Vdc and central with integrated receiver	1200Nm	pre-assembled chain rail 4000 mm in single piece

TECHNICAL DATA	SEZ7U/SEZ7	SEZ12U/SEZ12 SEZ124
Power	24 Vdc	24 Vdc
Consumption power	100 W	160 W
Motor consumption	4,16 A	6,66 A
Protection degree	IP 43	IP 43
Torque	700 N	1200 N
Speed	11 cm/s	11 cm/s
Stroke	2,8 m	2,8/3,5 m
Light	25 W (1x) E14	25 W (1x) E14
Max door size	10 m ²	16 m ²
Working cycle	60 %	60 %
Working temperature	-20° + 55° °C	-20° + 55° °C
Weight	10,5 Kg	11 Kg

output power accessories 24/800 mA

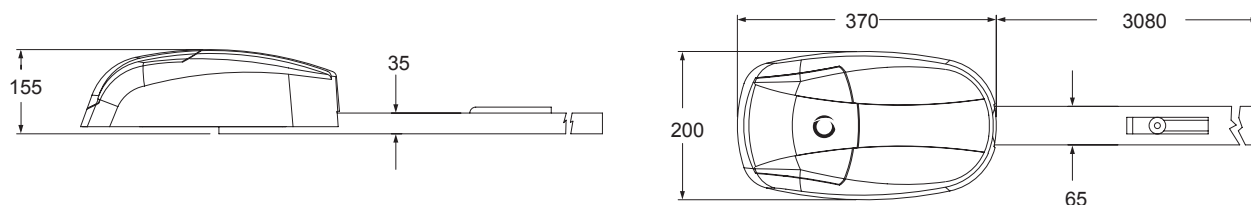
LIMITS OF USAGE		
sectional	up and over	non projecting up and over
SEZ7		
H max=2,7m m ² max=10m ²	H max=3m m ² max=9m ²	H max=2,5m m ² max=9m ²
SEZ12		
H max=2,7m m ² max=16m ²	H max=3m m ² max=14m ²	H max=2,5m m ² max=14m ²
SEZ124		
H max=3,4m m ² max=16m ²	H max=3,4m m ² max=14m ²	H max=3,2m m ² max=14m ²

2.4 Technical specifications

Suggested use and model - Guide and available dimensions

Model	Voltage (V)	Door surface (m ²)	Total length	Travel of the guide	Height of the door when opening	Ambient temperature difference (°C)
SEZ7U	190-240	<=10	3320 mm (1x3m)	2700 mm	<2700 mm	-20+55
SEZ7	190-240	<=10	3320 mm (3x1,1m)	2700 mm	<2700 mm	-20+55
SEZ12U	190-240	<=16	3320 mm (1x3m)	2700 mm	<2700 mm	-20+55
SEZ12	190-240	<=16	3320 mm (3x1,1m)	2700 mm	<2700 mm	-20+55
SEZ124	190-240	<=16	4000 mm (1x4m)	3400 mm	<3400 mm	-20+55

Data may change depending on the door friction and balance, and the tipe of guide used.



2.5 List of cables needed

Typical installation cables required for connection of various devices are shown in cables list table.

The cables used must be suitable for the installation; for example, we recommend a H03VV-F type cable for indoor installation and H07RN-F for outdoor.

CABLES LIST TABLE

Connection	da 1 a 10m	da 10 a 20m	da 20 a 30m
Power supply line	3 x 1,5 mm ²	3 x 1,5 mm ²	3 x 2,5 mm ²
Flashing light	2 x 0,5mm ²	2 x 0,5mm ²	2 x 0,5mm ²
Transmitter photocells	2 x 0,5mm ²	2 x 0,5mm ²	2 x 0,5mm ²
Receiver photocells	4 x 0,5mm ²	4 x 0,5mm ²	4 x 0,5mm ²
Key selector	3 x 0,5 mm ²	3 x 0,5 mm ²	3 x 0,5 mm ²
Fixed edges	2 x 0,5 mm ²	2 x 0,5 mm ²	2 x 0,5 mm ²
Mobile edges	2 x 0,5 mm ²	2 x 0,5 mm ²	2 x 0,5 mm ²
Antenna with RG58 shielded cable	RG58 Shielded cable max 10m		

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 operating limits specified for the automation where the product is installed

- 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 peak 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

- Check that the gate or door are balanced 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

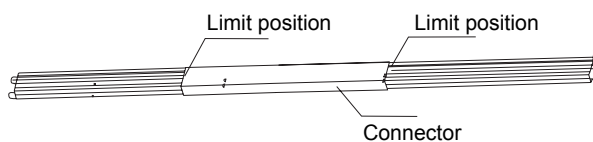
- Provide the power system with a disconnecting device with a gap between contacts enabling full disconnection under the conditions dictated by the overvoltage category III.

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

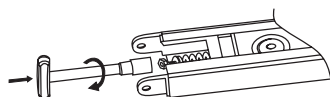
4 - PRODUCT INSTALLATION

4.1 Assembly of chain in 3 parts

1. Line the three pieces of the guide
2. Place the connector at the center of the guide and between the limits position, then repeat for the second connector.

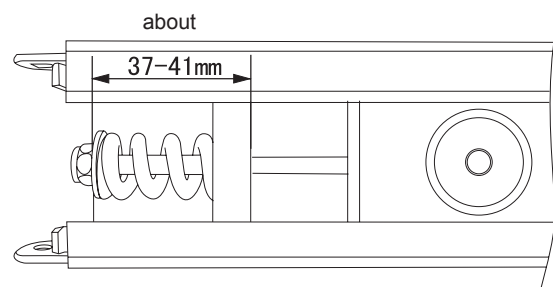


3. Tighten the nut with a wrench $\varnothing 13$

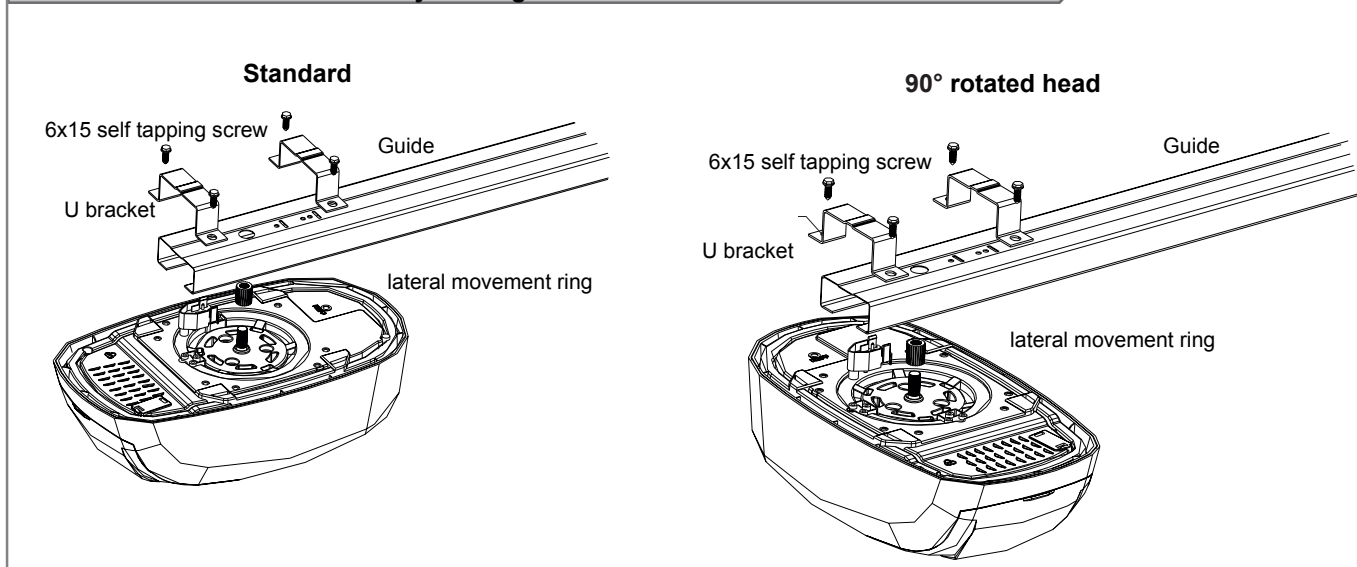


4. Adjust as indicated in the chain draught diagram

For a correct adjustment ensure that during movement of the door the chain does not slide out of the tracks (too loose) or on the contrary tends to bend the tracks (too tight)

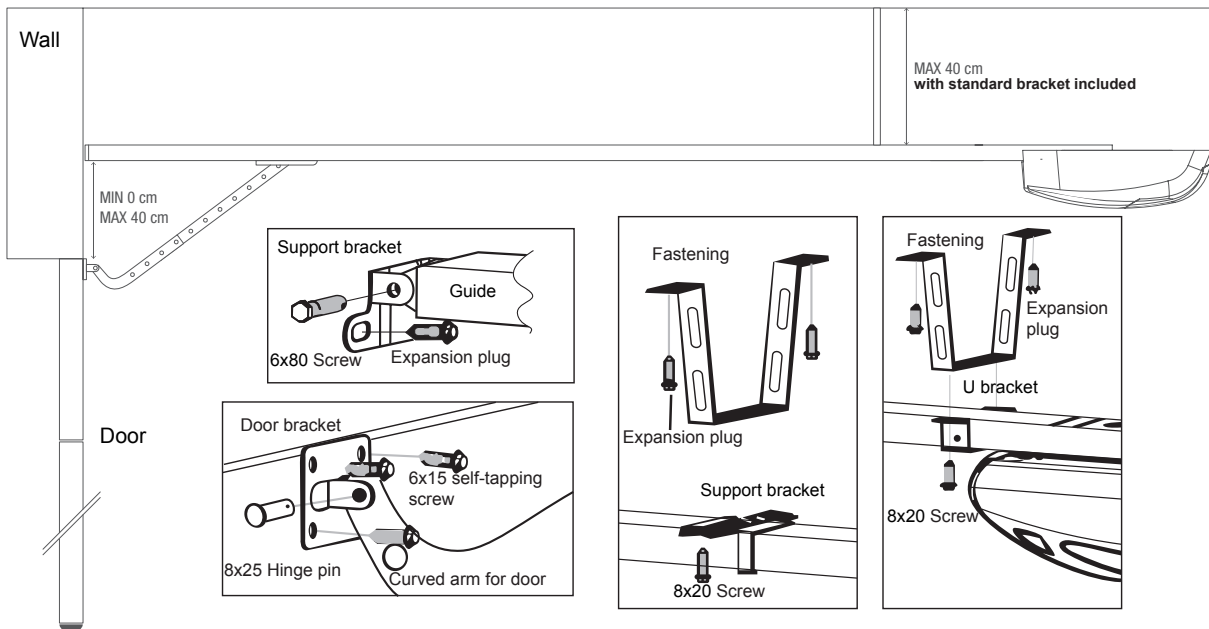


4.2 Connection of the motor body to the guide

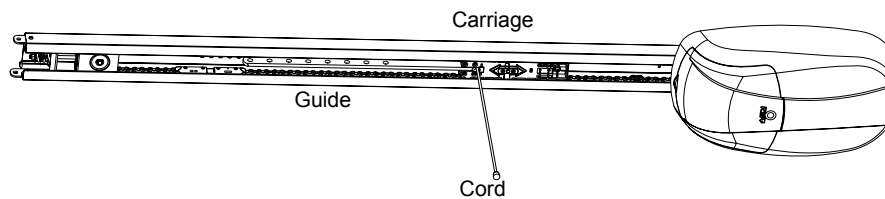


4.3 Installation of the guide and motor on the door

Position the guide with reference to figure



4.4 Manual opening of door



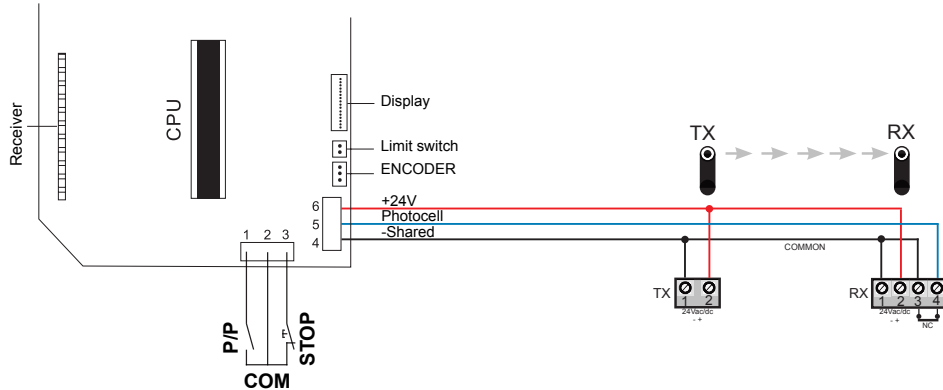
In case of power failure

- (1). If the door is closed:
Pull the cord and release the clutch to allow the door to be lifted easily.
- (2). If the door is open:
Pull the cord once to allow the door to lower to the closed position.

4.5 Wiring diagram

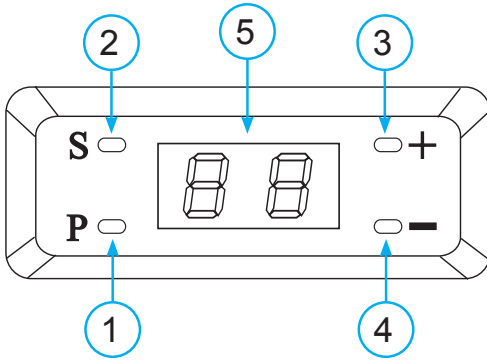
WARNING - Before making connections verify that the installation is not powered
Wiring diagram photocell, safety connection STOP and step/step command P/P

The emergency STOP contact must be connected between no. 2 and no. 3 (contact normally closed NC)
 The step/step contact P/P must be connected between no. 2 and no. 1 (contact normally open NA)



4.6 Normal mode visualization

In "NORMAL MODE", when the installation is powered normally, the 2-digit LCD displays rotates and after 30 sec. will turn off



Description of the buttons

- 1 - P function button
- 2 - S memorization of remotes button
- 3 - + parameter increase button
- 4 - - parameters decrease button
- 5 - Display

4.7 Customizing the installation

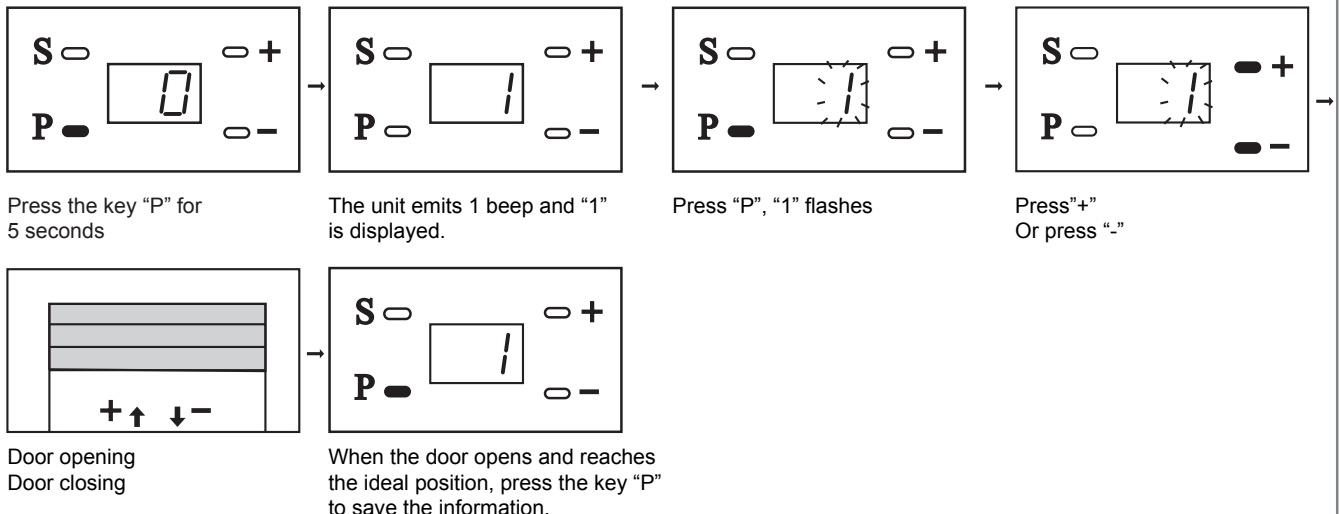
Programming

- Preparation A. Gently move the door to activate the carriage so that the automation system can guide the door
- B. Power on. The light will turn on, the unit provides a single audible signal and the display indicates "0" in cycles.

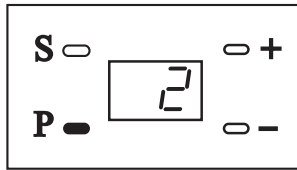
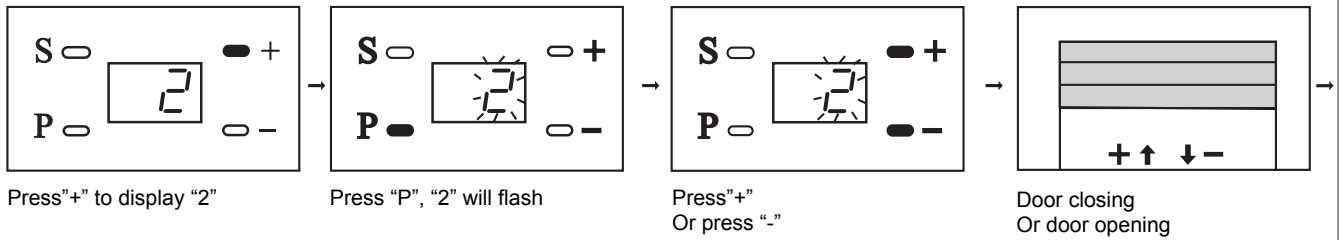
Attention: If programming is not complete, the settings will be cancelled automatically. If incorrect information has been programmed, power off and then power back on, referring to the following.

4.8 Setting of opening limit

Warning: the saved information has no effect if this procedure is used for setting the limit of closing



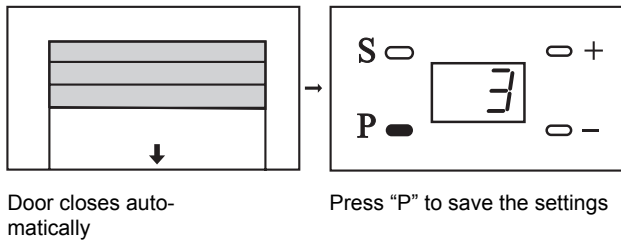
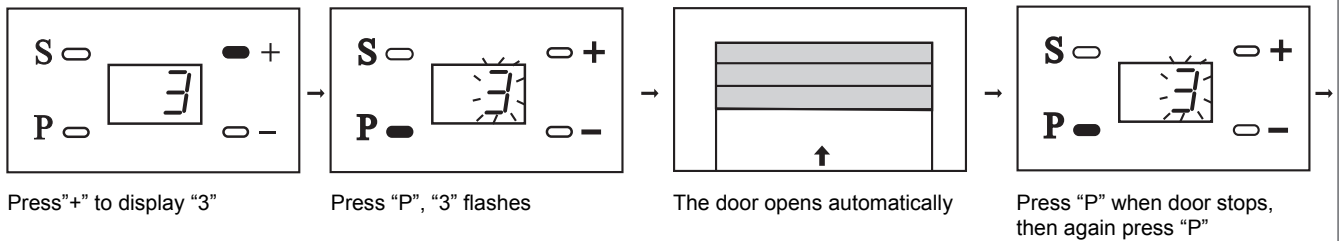
4.9 Setting of closing limit



When the door closes and reaches the ideal position, after 2 seconds press the key "P" to save the information.

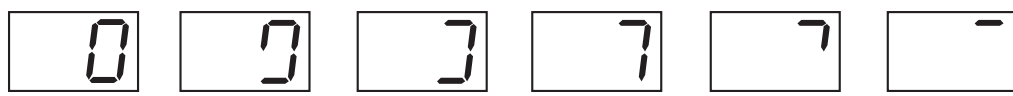
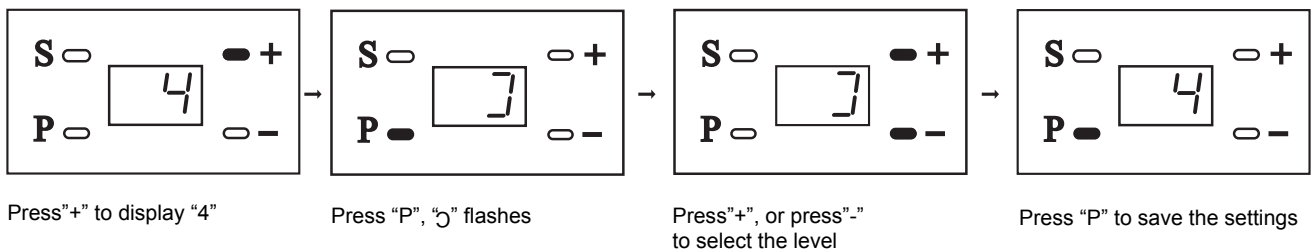
Attention!! In order to avoid false obstacles detection in closing while programming the motor it is strongly recommended to release the button as soon as the door touch the ground.

4.10 Force learning activation



4.11 Setting force level

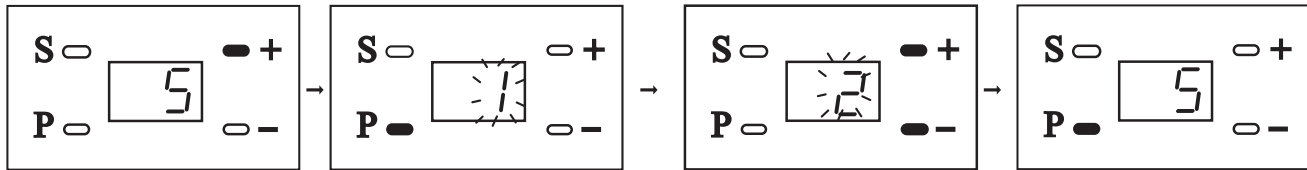
Note: in order to exit the programming and save the parameters push P button for 5 seconds.



When programming is finished the door must make a full cycle before usage, this cycle is used to learn the force after the modification made.

4.12 Setting reception mode

The control unit is set for the radio control of all Key Automation transmitters.



Press "+" to display "5"

Press "P", on the display '1' flashes, to indicate that the set radio decoding is ROLLING CODE (default setting); if 2 is selected on the display the set radio decoding is FIX CODE

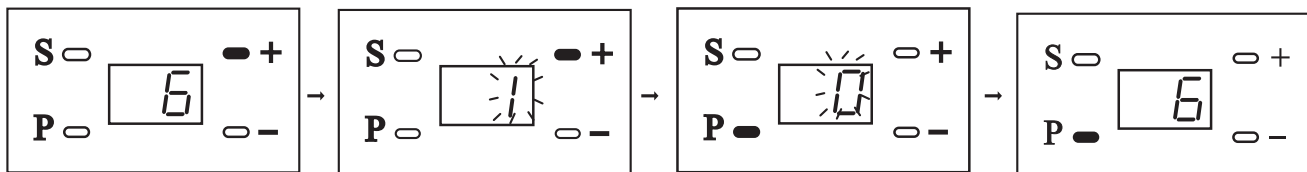
Press "+" or "-" to select the desired type of decoding

Press the key "P" to show "5", and save the settings.

Note: in order to exit the programming and save the parameters push P button for 5 seconds.

4.13 Photocell Function Setting

(Default setting on "0")



Press "+" to display "6"
Photocell is always active in closing

Press "+", the display shows 1, to indicate that the photocell is active during opening

Press "P", the display shows 0, to indicate that the photocell is not active during opening (default setting)

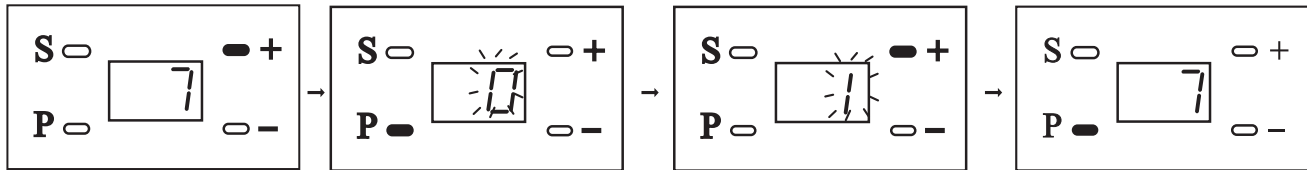
Press "P" again to save the settings

Through this function with the door closed and photocell interrupted, it is possible to enable/disable the opening command

Note: in order to exit the programming and save the parameters push P button for 5 seconds.

4.14 Setting of the duration of automatic closure

(Default setting: "off")



Press "+" to display "7"

Press "P" to show "0", the function is not active (default setting)

Press "+" to show "1" and activate the function. The duration automatic closing is 5 seconds.

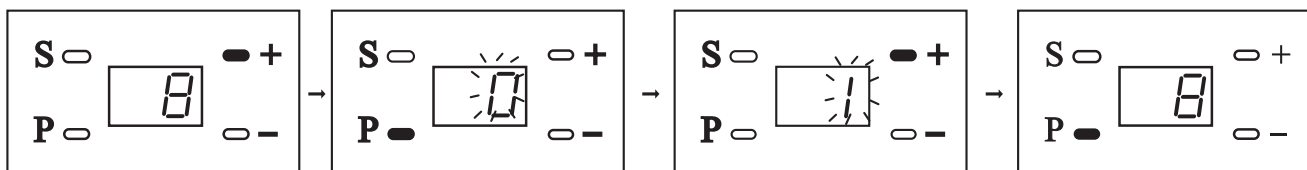
Press "+", or "-" to select the duration following the table below
Press "P" again to save the settings.

Value	0	1	2	3	4	5	6	7	8
Time	not active	5 sec	10 sec	20 sec	30 sec	60 sec	120 sec	180 sec	240 sec

Note: in order to exit the programming and save the parameters push P button for 5 seconds.

4.15 Setting of alarm for 2000 operating cycles

(Default setting : "off")



Press "+" to display "8"

Press "P". The display shows 0 to indicate that the function is not active (default setting)

Press "+". The display shows 1 to indicate that the function is active

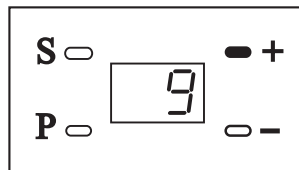
Press "P" again to save the settings

Silencing the acoustic alarm: power off, then power on again, or press the door control keys + or - for 5 seconds

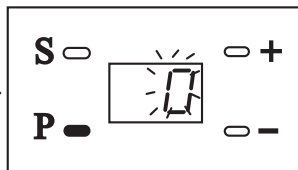
Note: in order to exit the programming and save the parameters push P button for 5 seconds.

4.16 Opening command setting

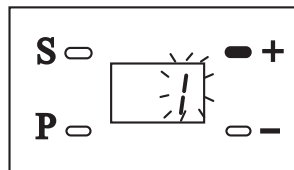
It is possible to change the functioning of the open/stop/close command to only open



Press "+" to display "9"



Press "P", the display shows "0" to indicate that the step/step command has the Open/Stop/Close function (default setting)



Press "+", "1" appears to indicate that the step/step command can only open

By enabling this function, the Step/Step command permits opening by accepting only re-opening during closing.

With the function "7=1" automatic closure enabled at each command the automatic closing time is updated

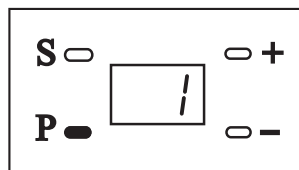
With the function "7=0" automatic closure disabled with the door open it is possible to reclose it using the step/step command

Note: in order to exit the programming and save the parameters push P button for 5 seconds.

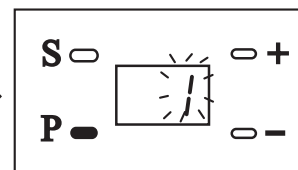
4.17 End of programming

Warning: this final step must be done otherwise information will not be saved.

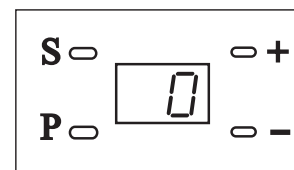
It is possible to abandon the programming phase and save data in any step on the functions menu from 4.7 to 4.17 in the following mode:



Press "P" in any function from 1 to 9 until the display shows the set value



Press and hold "P" for 5 seconds to save the modifications made



A beep followed by a sliding "0" indicates that the programming procedure has concluded successfully

4.18 Save and deletion of transmitters

Follow the procedure below to memorize ROLLING CODE transmitters. To save FIX CODE transmitters follow the paragraph 4.12, then after memorize transmitters as indicated here below.

1. Save

- Press the S button until "0" appears
- Release the S button
- Press the button of the transmitter to be memorised
- The "0" on the display disappears, the transmitter has been saved
- For the next transmitters (maximum 20) repeat the procedure for each single transmitter

4. Wall switch and courtesy light programming

- Push S button until "0" will appear
- Release S button
- Push once again S button until "0" will start to flash
- Release S button
- In order to switch on the courtesy light push the remote control button or wall switch button to be memorized

N.B: Once activated the courtesy light will stay on for 180 sec; in case of reactivation the courtesy light counter will re-start from zero. It is possible to memorize just one button with the courtesy light function.

BUZZER SIGNAL	MEANING
1 beep	code memorized
2 beeps	code already memorised
3 beeps	memory full

2. Deletion of a single transmitter

- Press and hold the P+S button
- Press the button of the transmitter to be deleted until the control unit emits a beeping sound
- Release the transmitter button
- This procedure will delete all the buttons regarding that transmitter

3. Deletion of all transmitters

- Disconnect the 230 Vac power supply
- Press the S button
- Reconnect the 230 Vac power supply holding the S button for 5 seconds until you hear the 2 beep sounds of the control unit

4.19 Troubleshooting

In this paragraph it is highlighted some malfunctions that may happen.

Together with the warn on the display, the flashing light (if connected) will warn with a sequence of two short flashes, pause, two short flashes

Problem	Causes	Solution
The automation system does not work	1. The plug is not inserted firmly 2. The fuse is burned out	1. Have a technician check 2. Have a technician replace the fuse with one of the same type
The range of the transmitter is excessively limited	The battery is not sufficiently charged	Replace the battery with a new one of the same model
The chain turns, but the door does not move	The unlock system is disengaged	Lock the clutch as per 4.3
The alarm continues to sound	Alarm: 2000 cycles of operation	Disconnect the power supply, then power back on
The door is not in position when it is opened or closed, or it does not work	Incorrect setting	Make settings again
The door does not work correctly, and the screen shows "H"	Control unit problem due to humidity	Dry the unit (request assistance from a technician)
Sudden interruptions or jerks in the operating system, and the screen shows "F"	1. The traction spring is not straight 2. Presence of an obstacle 3 The power supply is not stable	1. Have a technician adjust the traction spring. 2. Adjust the resistance to the suitable level until "F" disappears
During operation, you can hear a screeching noise	Lack of lubricant between the guide and carriage after a long period of use	Lubricate properly or grease the point between the guide and the carriage
The chain is loose and noisy	Loosening of chain due to prolonged use without lubrication between the guide and the carriage	Tight the chain and lubricate it. (see point 4.1).

5 - TESTING AND COMMISSIONING THE AUTOMATION

The testing of the automation 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 installation 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 balanced 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 installation you can proceed with the commissioning

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

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 motor

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 installation

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

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

WARNING - after detecting an obstacles, the gate or door stops, and the automatic closing is excluded; to restore movement you must press the command button or use the transmitter.

6 - INSIGHTS

6.1 Battery charger connection 900KBPK

Viper can also function in the absence of main power supply by installing 900KBPK without making any modifications to the system.

IMPORTANT: by using battery charger and photocells, it is necessary to connect the power of the photocells in the connectors CH+ and CH-.

Connection sequence:

- Disconnect the 230 VAC power supply
- Connect 900KBPK to terminals CH+ and CH- .
- Re-connect the mains power supply
- New batteries charge up after about ten hours.

7 - INSTRUCTIONS AND WARNINGS FOR THE END USER

Key Automation S.r.l. produces systems for the automation of gates, garage doors, automatic doors, rolling doors, parking lots and road barriers. However, Key Automation is not the manufacturer of your automation, which is rather the result of a process of analysis, evaluation, selection of materials, and installation performed by your own installer. Each automation is unique and only your installer has the experience and professionalism required to create an installation to suit your needs, safe and reliable over time, and carried out according to the good industry practice, i.e. compliant with the current regulations. Even if your automation meets the security level required by law, this does not exclude the existence of "residual risks", i.e. the possibility that it may cause dangerous situations, usually as a result of improper or irresponsible use; for this reason we would like to give you some suggestions:

- Before using the automation for the first time, ask the installer to explain the origin of residual risks.

Keep this manual for future use and deliver it to any new owner of the automation.

- Inappropriate or improper use of the automation can make it dangerous: do not command the movement of the automation if people, animals or things are in its range.

- Children: If properly designed, an automation ensures a high degree of security, preventing movement in the presence of people or things with its detection systems, and ensuring always predictable and safe activation. It is prudent to prevent children from playing near the automation and keep s out of their reach to prevent accidental activation.

- Malfunctions: As soon as you notice any malfunctions, disconnect the installation from the power supply and operate the manual release. Do not attempt any repairs by yourself, but require the assistance of your installer: meanwhile, the installation can operate like a non-automated opening device after releasing the motor with the release key supplied with the system.

- In case of failures or power failures: while awaiting the arrival of your installer or the restore of the electricity, if the installation is not equipped with backup batteries, the automation can be operated as any normal non-automated opening device. To do this, you must run the manual release (the only operation on the automation allowed to the end user).

Release and manual movement: before performing this operation pay attention that the device can be released only when the door is stationary.

- Maintenance: Like any machine, your automation needs periodic maintenance to ensure its long life and total safety. Agree with your installer on a maintenance plan on a periodic basis; Key Automation recommends a frequency of 6 months for normal domestic use, but this period may vary depending on the intensity of use. All inspection, maintenance or repairs should be performed only by qualified personnel.

- Do not change the installation and control or programming parameters of the automation: the responsibility lies with your installer.

- The testing, routine maintenance and any repairs must be documented by the person who performs them, and related documents must be kept by the owner.

The only interventions that are possible for the user and should be carried out periodically are the cleaning of the covers of the photocells, as well as the removal of any leaves or rocks that could block the automation. To prevent anyone from activating the gate or door, before proceeding, remember to release the automation and clean only with a cloth slightly dampened with water.

- Disposal: At the end of the automation life, make sure that the dismantling is carried out by qualified personnel and the materials are recycled or disposed of according to local regulations in force.

- Operate the gate or door (with transmitter, key switch, etc.); if everything is working properly, the gate or the door will open and close normally, otherwise the flashing light flashes and the manoeuvre does not start.

With the safety devices out of use, the automation must be repaired as soon as possible.

Replacing the transmitter battery: if your transmitter seems to work worse or not work at all after a while, this may simply depend on the exhaustion of the battery (depending on use, it may take several months to over a year). In that case, you will see that the confirmation of transmission light does not turn on, or comes on only briefly.

The batteries contain polluting substances: do not throw them in the garbage but use the methods prescribed by local regulations.

Thank you for choosing Key Automation; for more information feel free to visit our website www.keyautomation.it.