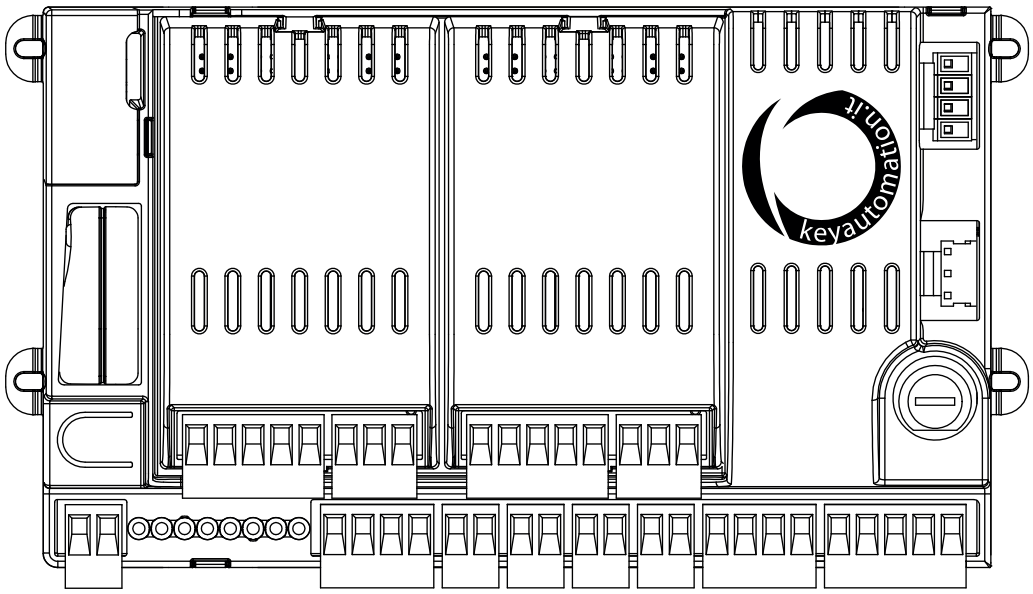
KEY AUTOMATION

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
Instrucciones y advertencias para su instalación y uso
Anleitungen und Hinweise zu Installation und Einsatz
Instruções e advertências para a instalação e utilização
Instrukcje i zalecenia dotyczące instalacji i użytkowania



14A

Centrale modulare per uno o due motori 24 Vdc
Modular control unit for one or two 24 Vdc motors
Logique de commande modulaire pour un ou deux moteurs 24 Vcc
Central modular para uno o dos motores de 24 Vcc
Modulares Steuergerät für einen oder zwei 24-VDC-Motoren
Unidade modular para um ou dois motores 24 Vdc
Centrala modułowa dla jednego lub dwóch silników 24 VDC

CE

Management System ISO 9001:2008

www.tuv.com
ID 9105043769

EN

TABLE OF CONTENTS

1	**Safety warnings**	page 19
2	**Product Introduction**	page 20
2.1	Description of the control unit	page 20
2.2	Description of the connections	page 20
2.3	Models and technical characteristics	page 20
2.4	List of cables required	page 21
3	**Preliminary Checks**	page 21
4	**Installing the Product**	page 22
4.1	Electric connections	page 22
4.2	Using the display programmer	page 23
4.3	Auto-learning of the travel stroke	page 24
4.4	Operating the automation using the display programmer	page 24
4.5	Operating the automation using the receiver	page 24
4.6	Diagnostic	page 25
4.7	Customising the system - BASIC SETTINGS	page 25
4.8	NIGHT LIGHTS	page 26
5	**Testing and commissioning**	page 27
5.1	Testing	page 27
5.2	Commissioning	page 27
6	**Details**	page 28
6.1	Customising the system - ADVANCED SETTINGS	page 28
6.2	RX4X RECEIVER	page 30
6.3	Programmer flow chart	page 31
7	**Instructions and warnings for the final user**	page 32
8	**EC declaration of conformity**	page 115

1 - SAFETY WARNINGS

CAUTION – ORIGINAL INSTRUCTIONS - important safety instructions. Compliance with the safety instructions below is important for personal safety. 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 12445; 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 12445 standard which establishes the test methods for testing door and gate automation systems.

WARNING - 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;

all operations requiring opening of the protective housings of various automation system components must be performed with the control unit disconnected from the power supply. 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;

users are advised to install an emergency stop button close to the automation system (connected to the control PCB STOP input) to allow the door to be stopped immediately in case of danger;

this device is not intended for use by persons (including children) with impaired physical, sensory or mental capacities, or with lack of experience or skill, unless a person responsible for their safety provides surveillance or instruction in use of the device;

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.

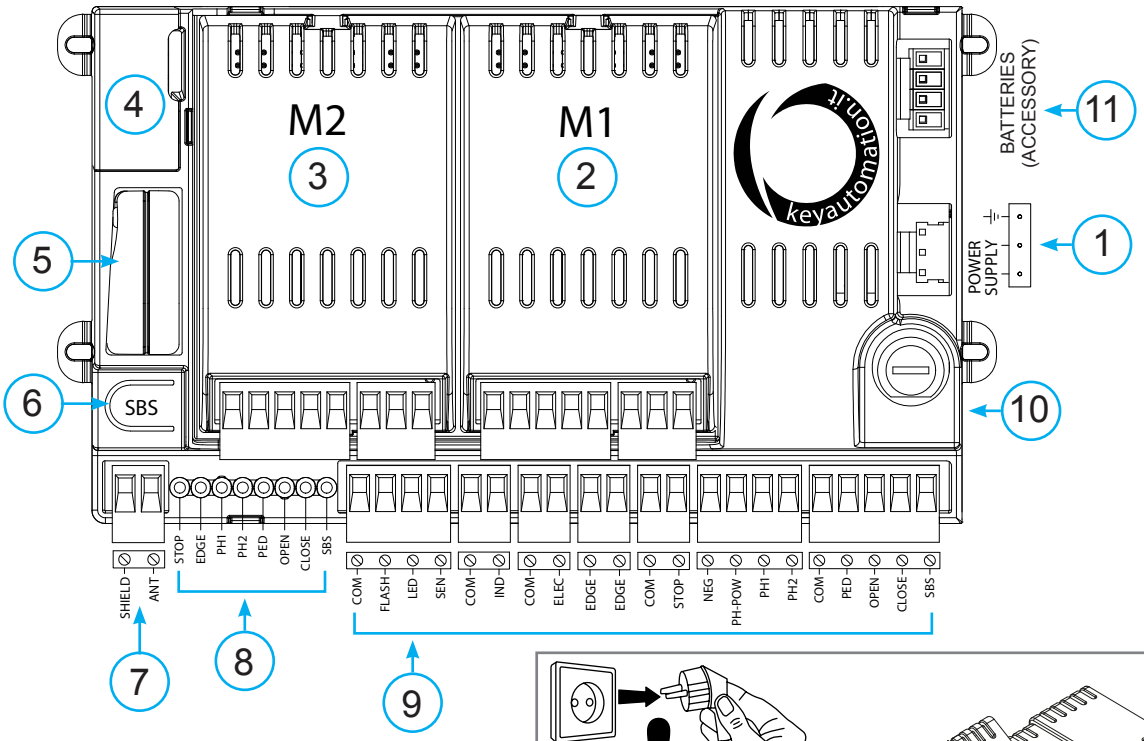
WARNING - The automation system component packaging material must be disposed of in full observance of current local waste disposal legislation.

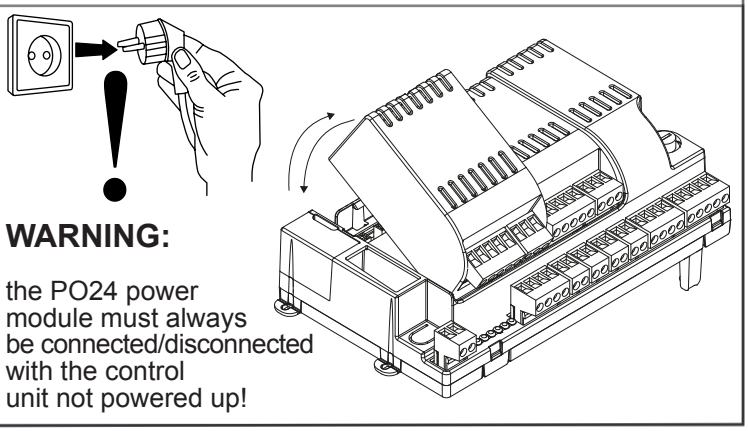
WARNING - The data and information in this manual are subject to modification at any time, with no obligation on the part of Key Automation S.r.l. to provide notice.

2 - INTRODUCING THE PRODUCT

2.1 - Description of the control unit

The 14A control unit is a modular system for the control of Key Automation motors for the electric opening and closure of swing and sliding gates, barriers and garage doors.
The 14A has a programmer with display (optional) allowing easy programming and constant monitoring of the control unit's status; the menu structure also allows easy setting of working times and operating modes. The display menu is multilingual.
All other, improper, use of the control unit is forbidden.





WARNING:

the PO24 power module must always be connected/disconnected with the control unit not powered up!

2.2 - Description of the connections

1- Control unit power supply connection 24 Vac
2- M1 power module socket
3- M2 power module socket
4- Display programmer connector
5- Receiver compartment RX4X/RX4U
6- Integrated STEP BY STEP control button
7- External antenna connections
8- Input status indicator LEDs
9- Accessory/input connection terminal board
10- Protective fuse, 2.5AT
11 - Battery connection

2.3 - Models and technical characteristics

CODE	DESCRIPTION
900MA24	Logic module for combination with 1 or 2 PO24 power modules for the control of 1 or 2 24V motors for swing and sliding gates, barriers and garage doors

- Power supply with protection against short-circuits inside the control unit, on motors and on the connected accessories.
- Obstacle detection by means of current sensor.
- Anti-crush safety device.
- Automatic learning of working times.
- Programmable deceleration during opening and closure.
- Safety input deactivation by means of software.
- Control panel with microprocessor logic.

TECHNICAL CHARACTERISTICS		
Power supply (L-N)	230Vac (+10% - 15%) 50/60 Hz	230Vac (+10% - 15%) 50/60 Hz
Rated power	maximum 210W	maximum 300W
Photocell power supply output	24Vdc (without regulation) maximum 250mA	24Vdc (without regulation) maximum 250mA
Flashing light output	24Vdc (without regulation) 25W	24Vdc (without regulation) 25W
Courtesy light output	24Vdc (without regulation) 15W	24Vdc (without regulation) 15W
Electric lock output	12Vac maximum 15VA	12Vac maximum 15VA
Gate open warning light output	24Vdc (without regulation) 5W	24Vdc (without regulation) 5W
Antenna input	50Ω RG58 type cable	50Ω RG58 type cable
Operating temperature	-20 °C + 55 °C	-20 °C + 55 °C
Accessory fuses	2.5AT	2.5AT
Power supply line fuses	2AT	2AT
Use in particularly acid, saline or explosive atmospheres	NO	NO
Protection class	IP54 (inside protective casing)	IP54 (inside protective casing)
Control unit dimensions	183 x 102 x 59 H mm	183 x 102 x 59 H mm
Weight	4,3 kg	4,5 kg

* Compulsory for motors: RAY4024, SN-50-24 and INT-24

2.4 - List of cables required

The cables required for connection of the various devices in a standard system are listed in the cables list table.

The cables used must be suitable for the type of installation; for example, an H03VV-F type cable is recommended for indoor applications, while H07RN-F is suitable for outdoor applications.

ELECTRIC CABLE TECHNICAL SPECIFICATIONS		
Connection	**cable**	**maximum permitted limit**
Power line	1 cable of 3 x 1.5 mm^2	20 m *
Flashing light, Courtesy light, ambient light sensor Antenna	4 x 0.5 mm^2** 1 RG58 type cable	20 m 20 m (< 5 m recommended)
Electric lock	1 cable of 2 x 1 mm^2	10 m
Transmitter photocells	1 cable of 2 x 0.5 mm^2	20 m
Receiver photocells	1 cable of 4 x 0.5 mm^2	20 m
Sensitive edge	1 cable of 2 x 0.5 mm^2	20 m
Key-operated selector switch	1 cable of 4 x 0.5 mm^2**	20 m
Motor power supply line	1 cable of 2 x 1.5 mm^2	10 m
Encoder power supply line	1 cable of 3 x 0.5 mm^2	10 m

* If the power supply cable is more than 20 m long, it must be of larger gauge (3x2.5mm^2) and a safety grounding system must be installed near the automation unit.
** Two cables of 2 x 0.5 mm^2 can be used as an alternative

3 - PRELIMINARY CHECKS

Before installing the product, perform the following checks and inspections:

check that the gate is suitable for automation;

the weight and size of the gate must be within the operating limits specified for the automation system in which the product is installed;

check that the gate has firm, effective mechanical safety stops;

make sure that the product fixing zone is not liable to flooding;

high acidity or salinity or proximity to heat sources might cause the product to malfunction;

in case of extreme weather conditions (e.g. snow, ice, wide temperature variations or high temperatures), friction may increase, causing a corresponding rise in the force needed to operate the system; the starting torque may therefore exceed that required in normal conditions;

check that, when operated by hand, the gate moves smoothly without any areas of greater friction or derailment risk;

check that the gate is well balanced and will therefore remain stationery when released in any position;

check that the electricity supply line to which the product is to be connected is suitably earthed and fitted with magnetothermal and differential protection;

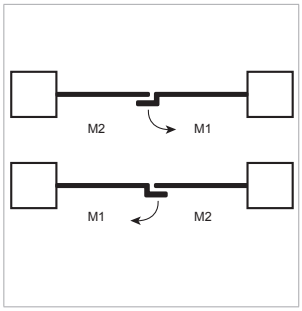
the system power supply line must include a circuit breaker device with a contact gap allowing complete disconnection in the conditions specified by class III overvoltage;

ensure that all the material used for installation complies with the relevant regulatory standards.

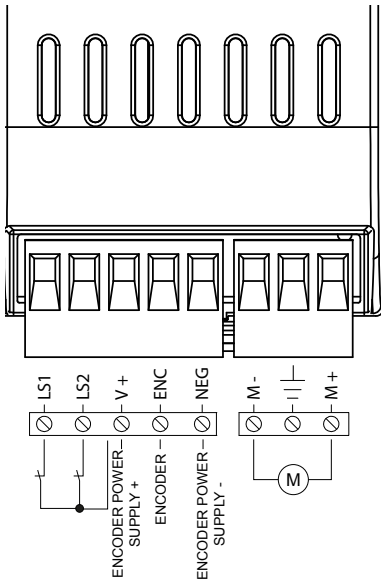
4 - INSTALLING THE PRODUCT

4.1 - Electrical connections

WARNING - Before making the connections, ensure that the control unit is not powered up

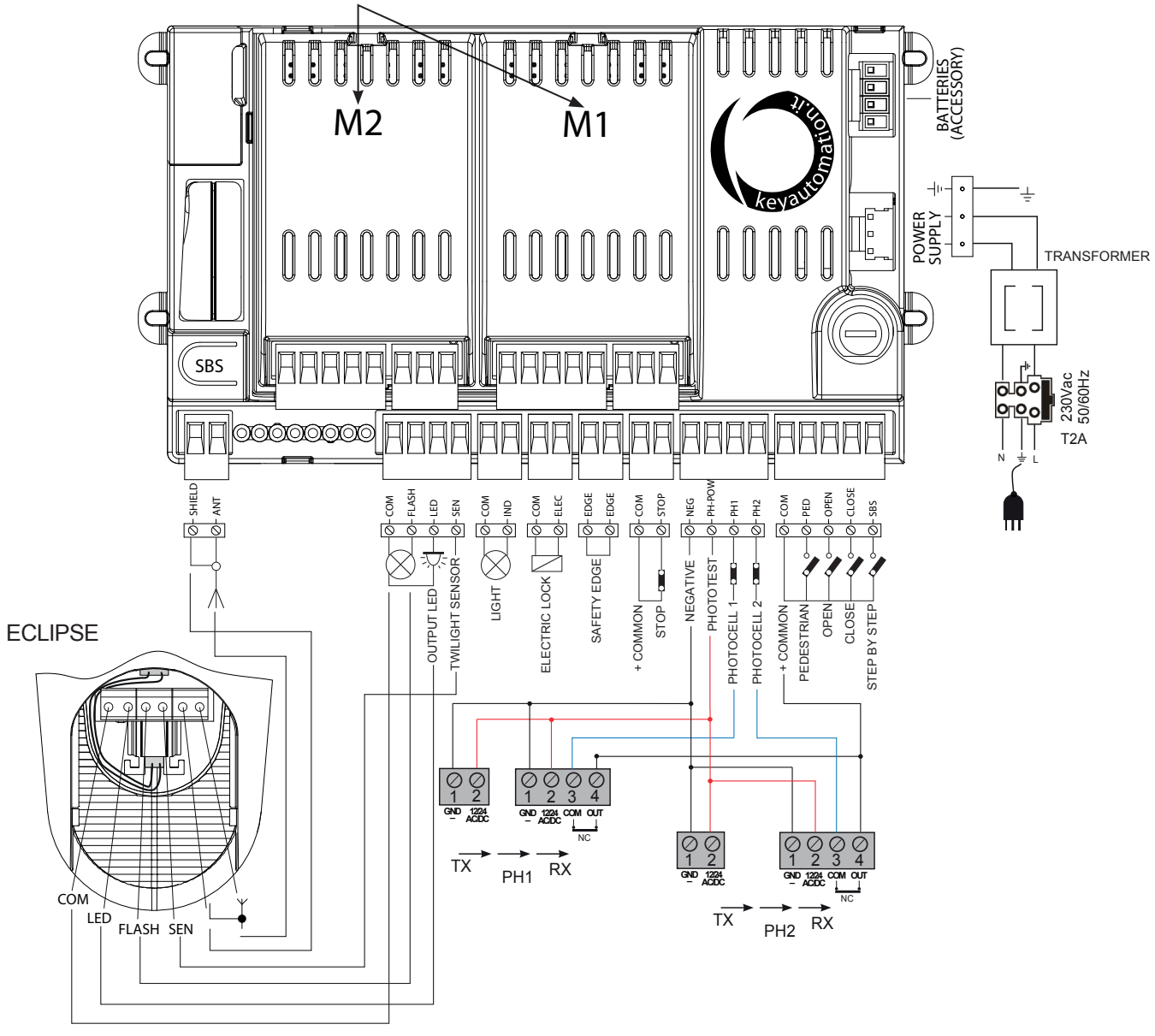


PO24 POWER MODULE



PO24 CONNECTIONS	
LS1	Limit switch 1 input (only for SUN)
LS2	Limit switch 2 input (only for SUN)
V+	Limit switch / encoder power supply positive common (12 Vdc 50 mA MAX)
ENC	Encoder S signal input
NEG	Encoder power supply negative
M-	Motor output
⏚	Earth
M+	Motor output

POWER SUPPLY CONNECTIONS	
L	Power supply 230 Vac 50-60 Hz
⏚	Earth
N	Power supply neutral 230 Vac 50-60 Hz



MA24 ELECTRIC CONNECTIONS	
SHIELD	Antenna - shield -
ANT	Antenna - signal -
COM	Common for FLASH, LED, SEN inputs / outputs
FLASH	Flashing light output 24Vdc (without regulation) maximum 25W
LED	Courtesy light output 24Vdc (without regulation) maximum 15W (radio channel 4 selecting COURTESY LIGHT START = 2, COURTESY LIGHT TIME = 0)
SEN	Ambient light sensor input
COM	IND output common
IND	Gate open warning light output, 24Vdc (without regulation) maximum 4W
COM	ELEC output common
ELEC	Electric lock output 12Vac, maximum 15VA
EDGE/EDGE	Sensitive edge output, NC contact or resistive 8k2
COM	STOP output common
STOP	Safety STOP NC contact between STOP and COM. This input is considered as a safety device; the contact may be broken at any time, cutting out the automation at once and disabling all functions, including automatic closure
NEG	Photocell power supply negative output
PH-POW	Photocell power supply positive output, 24Vdc (without regulation, maximum 250mA
PH1	Photocells (closure), NC contact between PH1 and COM. The photocell is tripped at any time during closure of the automation, stopping movement at once and reversing the travel direction
PH2	Photocells (opening), NC contact between PH2 and COM. The photocell is tripped at any time during opening and closure of the automation, stopping movement at once; the automation will continue opening when the contact is restored if it was opening, or continue closing if it was closing (see parameter “PHOTO 2”)
COM	Common for PED, OPEN, CLOSE and SBS outputs
PED	PEDESTRIAN opening command, NO contact between PED and COM Used to open the gate partially, depending on the software setting
OPEN	OPEN command, NO contact between OPEN and COM Contact for the opening function
CLOSE	CLOSE command, NO contact between CLOSE and COM Contact for the closing function
SBS	STEPPING command, NO contact between SBS and COM Open/Stop/Close/Stop command, or as set in the software

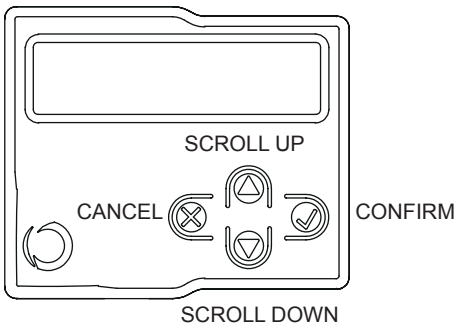
4.2 - Using the display programmer

To customise the programmer’s language and contrast, proceed as follows:

OPTIONS DISPLAY → ✓ → **SELECT LANGUAGE** → ✓

N.B.: The first time the display is switched on, the user is prompted to select the language. Press ▲ or ▼ to select the language required and then confirm with V.
If no language is selected (X key pressed), the control unit will use the default language (ENGLISH) until the next time it is switched on.

In normal mode, i.e. when the system is powered up normally and the display programmer is connected, press X until the name KEY AUTOMATION appears. This will display the following status messages:



The complete flow chart for the display programmer is in point 6.3 on page 31.

EVENT	DESCRIPTION	KEY TO MAIN CONTROL FLASHING LIGHT AND LEDS
opening	Gate opening	
closure	Gate closing	
automatic closure	Gate open with timed reclosure active	
stop during closure	Gate stopped during closure	
stop during opening	Gate stopped during opening	
open	Gate completely open without automatic reclosure	
closed	Gate completely closed	
programmation	during the programming phase	2 quick flashes + pause + 1 flash
M1 obstacle	Motor 1 obstacle detected	4 quick flashes + pause, 3 times
M2 obstacle	Motor 2 obstacle detected	4 quick flashes + pause, 3 times
photo 1!	Photocell 1 tripped	2 quick flashes + pause, 3 times
photo 2!	Photocell 2 tripped	2 quick flashes + pause, 3 times
sensitive edge!	Sensitive edge tripped	5 quick flashes + pause, 3 times
pedestrian opening	Pedestrian opening in progress	
automatic pedestrian closure	Gate opening to pedestrian position with timed reclosure activated	
realignment	Realignment after a manual release	
FLASH/NLS error	Night Light System line overload	6 quick flashes + pause, 3 times
ELEC/IND error	Electric lock / gate open light line overload	6 quick flashes + pause, 3 times
Phototest error	Phototest error detected	3 quick flashes + pause, 3 times
Limit switches error!	Limit switch/mechanical end stop error detected	8 quick flashes + pause, 3 times

4.3 - Auto-learning of the travel stroke

The first time the control unit is powered up, an auto-learning procedure must be carried out to acquire fundamental parameters such as the travel stroke length and deceleration points.

QUICK PROGRAMMING

If this programming mode is used, the decelerations will reset to the default values with the same percentage during both opening and closing.
Follow the chart below with the programmer display.
N.B. If the decelerations are also to be programmed, move straight on to the next table.

1. Select the type of installation and the relative type of motor to be installed:

WARNING! Selecting a motor different from the one connected may damage the system.

2. CHECKING CONNECTION OF THE SAFETY DEVICES (PHOTO 1 - PHOTO 2 - SENSITIVE EDGE - STOP BUTTON).
During programming, you will be asked whether there are any safety devices connected to the system. If additional safety devices are connected later, they are simply activated in the relative menu (see advanced parameter table).

3. SAFETY DEVICES ACTIVE/DEACTIVATED DURING AUTO-LEARNING OF TRAVEL STROKE.
If there are safety devices connected, during travel stroke programming, the safety devices can be deactivated to prevent accidental interruption of this operation. At the end of the auto-learning procedure, the safety devices selected earlier will be reactivated.

4. QUICK AUTO-LEARNING OF TRAVEL STROKE AND DECELERATIONS.
Release the motors and lock them in place again halfway through the travel stroke. If the first motor operation is not opening, press ▲ or ▼ to reverse the travel direction. M1 must always open before M2. If the motors are inverted, stop the procedure in the control unit by pressing button X on the display, swap the power supply terminals of the two motors and start again from the beginning. Follow the instructions on the display.

FULL PROGRAMMING

If this programming mode is used, both the opening and the closing decelerations can be customised.
If no customised settings are made during programming, the control unit will set the default values automatically. Follow the chart below with the programmer display.

1. Select the type of installation and the relative type of motor to be installed:

WARNING! Selecting a motor different from the one connected may damage the system.

2. CHECKING CONNECTION OF THE SAFETY DEVICES (PHOTO 1 - PHOTO 2 - SENSITIVE EDGE - STOP BUTTON).
During programming, you will be asked whether there are any safety devices connected to the system. If additional safety devices are connected later, they are simply activated in the relative menu (see advanced parameter table).

3. SAFETY DEVICES ACTIVE/DEACTIVATED DURING AUTO-LEARNING OF TRAVEL STROKE.
If there are safety devices connected, during travel stroke programming, the safety devices can be deactivated to prevent accidental interruption of this operation. At the end of the auto-learning procedure, the safety devices selected earlier will be reactivated.

4. COMPLETE AUTO-LEARNING OF THE TRAVEL STROKE AND DECELERATIONS.
Release the motors and lock them in place again halfway through the travel stroke. If the first motor operation is not opening, press ▲ or ▼ to reverse the travel direction. M1 must always open before M2.
If the motors are inverted, stop the procedure in the control unit by pressing button X on the display, swap the power supply terminals of the two motors and start again from the beginning.
When prompted, press the V key to set the motor's deceleration point, following the instructions on the display.
It is important to allow for the gate's moment of inertia and to check that the decelerations set allow the motors to brake the leaves of the gate before they reach the limit position.

4.4 - Operating the automation using the display programmer

To operate the gate in manual mode and check the automation after programming of the travel stroke, proceed as follows:

Use ▲ for step-by-step operation. Use ▼ to switch the night lights on and off. Use V for pedestrian opening and closing to exit the property.

4.5 - Operating the automation using the receiver

Channel 1: step-by-step
Channel 2: pedestrian
Channel 3: open
Channel 4: lights ON/OFF (note 1)

Note 1: The ON/OFF command switches the lights on or off in manual mode.
If the Night Light System is active, normal operation of the system will restart at the next cycle.
If the Night Light System is not active, pressing the switch once forces switch-on of the lights, while pressing it again resets the courtesy light operating logic.

4.6 - Diagnostic

A number of parameters, including the current absorption or motor speed, can be viewed at any time using this function. Proceed as follows:

MOTOR 1 CURRENT (mA)
MOTOR 2 CURRENT (mA)
MOTOR 1 POSITION (%)
MOTOR 2 POSITION (%)
MOTOR 1 SPEED (%)
MOTOR 2 SPEED (%)
TOTAL CYCLES (CYCLES)
CYCLES LEFT BEFORE SERVICE
SOFTWARE VERSION

4.7 - Customising the system - BASIC SETTINGS

If necessary, users may select the BASIC SETTINGS, which allow modification of the control unit's basic parameters.

Proceed as follows:

CAUTION: the parameters may vary with respect to those in the table below, depending on the motor to be installed.

	PARAMETERS	DESCRIPTION	DEFAULT	MIN.	MAX.	UNIT
1	AUTOMATIC CLOSING TIME	Automatic reclosure time (0 = off) Seconds of delay before the gate recloses automatically after opening	0	0	900	s
2	AUTOMATIC CLOSING AFTER TRANSIT	Reclosing time after transit (0 = off) Seconds of delay before the gate recloses automatically after excitation of photocell 1 during opening or with the gate open.	0	0	30	s
3	SENSITIVITY	Motor sensitivity, sensitivity when detecting an obstacle. 1 = minimum sensitivity, maximum force on obstacle 10 = maximum sensitivity, minimum force on obstacle	3	0	10	
4	OPENING SPEED	Motor speed during opening 1 = minimum 2 = low 3 = medium 4 = high 5 = maximum	4	1	5	
5	SLOW DOWN OPENING SPEED	Motor speed during opening deceleration phase. 1 = minimum 2 = low 3 = medium 4 = high 5 = maximum	1	1	5	
6	CLOSING SPEED	Motor speed during closing 1 = minimum 2 = low 3 = medium 4 = high 5 = maximum	4	1	5	

7	SLOW DOWN CLOSING SPEED	Motor speed during closing deceleration phase. 1 = minimum 2 = low 3 = medium 4 = high 5 = maximum	1	1	5	
8	STEP BY STEP	SS configuration: 0 = Normal (OP-ST-CL-ST-OP-ST…) 1 = Alternate STOP (OP-ST-CL-OP-ST-CL…) 2 = Alternate (OP-CL-OP-CL…) 3 = Apartment block – timer (always opens) 4 = Apartment block with immediate reclosure (always opens. Closes if gate is open)	0	0	4	
9	MOTOR 2 DELAY	Leaf 2 opening delay with gate closed 0 - 60 sec.	2	0	60	s
10	SLOW DOWN LENGTH	Deceleration distance 0 = Programming decelerations 1 to 100 = Motor deceleration percentage during opening and closure	0	0	100	% (step of 1)
11	ENERGY SAVING	Energy saving: enables photocell switch-off when gate is closed 0= disabled 1= enabled	0	0	1	

4.8 - NIGHT LIGHTS

The night lights function automatically with the Eclipse flashing light connected appropriately.

To customise, proceed as follows:

14A → ✓ → **NIGHT LIGHTS** → ✓

	PARAMETERS	DESCRIPTION	DEFAULT	MIN.	MAX.	UNIT
1	AUTOMATIC LIGHT	0 = Night Light System deactivated 1 = Night Light System active (automatically activated during learning of the stroke with the ECLIPSE flashing light connected)	0	0	1	
2	LIGHT INTENSIVITY	1 to 5 = Brightness at which LEDs switch on during the night	3	1	5	
3	EXTERNAL LIGHT LEVEL	1 = Light sensor tripped with low outdoor light 2 = Light sensor tripped with medium outdoor light 3 = Light sensor tripped with bright outdoor light	2	1	3	

The Night Light System switches the lights on or of 15 minutes after the set threshold is exceeded. This delay is to prevent false switch-on or switch-off due to external light sources such as car headlights.

5 - TESTING AND COMMISSIONING THE AUTOMATION SYSTEM

The system must be tested by a qualified technician, who must perform the tests required by the relevant standards in relation to the risks present, to check that the installation complies with the relevant regulatory requirements, especially the EN12445 standard which specifies the test methods for gate and door automation systems.

5.1 - Testing

All system components must be tested following the procedures described in their respective operator's manuals

ensure that the recommendations in Chapter 1 - Safety Warnings - have been complied with

check that the gate or door is able to move freely once the automation system has been released and is well balanced, meaning that it will remain stationary when released in any position;

check that all connected devices (photocells, sensitive edges, emergency buttons, etc.) are operating correctly by performing gate or door opening, closing and stop tests using the connected control devices (transmitters, buttons or switches);

perform the impact measurements as required by the EN12445 standard, adjusting the control unit's speed, motor force and deceleration functions if the measurements do not give the required results, until the correct setting is obtained.

5.2 - Commissioning

Once all (and not just some) of the system devices have passed the testing procedure, the system can be commissioned;

the system's technical dossier must be produced and kept for 10 years. It must contain the electrical wiring diagram, a drawing or photograph of the system, the analysis of the risks and the solutions adopted to deal with them, the manufacturer's declaration of conformity for all connected devices, the operator's manual for every device and the system maintenance plan:

fix a dataplate with the details of the automation, the name of the person who commissioned it, the serial number and year of construction and the CE marking on the gate or door:

also fit a plate specifying the procedure for releasing the system by hand:

draw up the declaration of conformity, the instructions and precautions for use for the end user and the system maintenance plan and consign them to the end user;

ensure that the user has fully understood how to operate the system in automatic, manual and emergency modes;

the end user must also be informed in writing about any risks and hazards still present;

WARNING - after detecting an obstacle, the gate or door stops during its opening travel and automatic closure is disabled; to restart operation, the user must press the control button or use the transmitter.

6 - FURTHER DETAILS

6.1 - Customising the system - ADVANCED SETTINGS

If necessary, users may select the ADVANCED SETTINGS, which allow modification of the control unit's advanced parameters. Proceed as follows:

CAUTION: the parameters may vary with respect to those in the table below, depending on the motor to be installed.

14A → ✓ → **ADVANCED SETTINGS** → ✓

	PARAMETERS	DESCRIPTION	DEFAULT	MIN.	MAX.	UNIT
1	PHOTO 1	Use of PHOTO1 when starting from closed 0 = PHOTO 1 deactivated 1 = PHOTO1 is checked 2 = the gate starts even with PHOTO1 activated	2	0	2	
2	PHOTO 2	Use of PHOTO2 0 = PHOTO 2 deactivated 1 = enabled during both opening and closing OP/CL 2 =only enabled during opening OP	1	0	2	
3	PHOTOTEST	Photo-device test 0 = off 1 = PHOTO1 on 2 = PHOTO2 on 3 = PHOTO1 and PHOTO2 on	0	0	3	
4	EDGE TYPE	Sensitive edge type 0 = off 1 = 8k2 sensitive edge 2 = NC contact	2	0	2	
5	SAFETY EDGE	Sensitive edge tripping mode 0= only tripped during closure with direction reversal 1 = stops the automation (during both opening and closure) and retreats from the obstacle (travels short distance in opposite direction)	0	0	1	
6	PEDESTRIAN OPENING LENGHT	Pedestrian opening	50	30	100	% (step of 1)
7	AUTOMATIC CLOSING FROM PEDESTRIAN OPEN	Time for automatic closure from pedestrian opening (0=off) 1 to 900 Seconds of delay before automatic closure from pedestrian opening	0	0	900	s
8	FLASH LIGHT	Flashing light output setup 0 = Fix 1 = Flashing	1	0	1	
9	PRE-FLASHING	Pre-flashing time (0 = off)	0	0	20	s
10	COURTESY LIGHT START	Courtesy light setup 0 = ON at end of operation for courtesy light time 1 = ON if gate not closed + courtesy light duration time at end of operation 2 = ON if courtesy light timer has not gone out since start of operation	0	0	2	
11	COURTESY LIGHT TIME	Courtesy light duration time (0 = off)	30	0	900	s
12	LIGHT INTENSIVITY AT END OF MOVEMENT	0 = light off after operation 5 = maximum brightness with motor stopped	2	0	5	
13	STOP BUTTON	0 = NC stop button not connected 1 = NC stop button connected	1	0	1	

14	DEAD MAN	0 = off 1 = on (safety devices disabled)	0	0	1	
15	GATE OPEN INDICATOR	0 = deactivated 1 = gate open light ON/OFF 2 = gate open light proportional	0	0	2	
16	MAINTENANCE	Service interval cycle threshold	10	1	200	x 1000 cycles
17	MAINTENANCE FLASH	Enabling of continuous flashing when service is required (only active with gate closed). 0 = off 1 = on	0	0	1	
18	ELECTROLOCK ACTIVATION	0 = off Activated for from 1 to 20 seconds when the motors start to open the gate	2	0	20	s
19	WATER HAMMERING IN OPENING	From motor M1 closed 0 = off Motor M1 activated for from 1 to 30 seconds in the closing direction to ensure that the electric lock releases	0	0	30	s
20	WATER HAMMERING IN CLOSING	From motor M1 closed 0 = off Motor M1 activated for from 1 to 30 seconds in the closing direction to ensure that the electric lock engages	0	0	30	s
21	MOTOR RELEASE AT STOP	Motor release from limit switch. Useful for lightweight gates 0 = off 1 to 10 release levels (1 = minimum release, 10 = maximum release)	0	0	10	
22	START UP BOOST	High-speed motor start-up. Useful for heavy gates in winter 0 = off 1 = on	0	0	1	
23	CLOSING DELAY M 1	Leaf 1 closing delay with gate open 0 = Off 1 = 1 to 180 Seconds On	1	0	180	s
24	ENCODER	1 = Off (use of virtual encoder) 2 = On (use of motor’s physical encoder)	1	1	2	
25	ENCODER PULSES	1 to 10 pulses per revolution of the physical encoder (only with 24 set as “2”)	1	1	10	
26	DEFAULT	Restoring the default values	0	0	1	

6.2 - RX4X RECEIVER

If necessary, users may select the RX4X RECEIVER MENU, used to manage the parameters relating to the radio unit.

Proceed as follows:

14A → ✓ → **RX4X** → ✓

ADD TX	Allows a new code to be memorised in the receiver
DELETE TX	Allows deletion of a code from the receiver
DELETE ALL	Clears the receiver's entire memory
READ MEMORY	Displays the codes in the memory
MEMORY LOCK/UNLOCK	Unlocks or locks the receiver's memory

ADDING A TX USING THE DISPLAY

This procedure allows one or more transmitters to be memorised in the receiver.
(WARNING: if there is not already at least one transmitter in the memory, the first transmitter entered will establish the type of code - rolling code or fixed code).

1. Access the menu **RX4X** → ✓ → **ADD TX** → ✓

2. Select the type of channel in which the button is to be saved (CHANNEL 1= step by step; 2= pedestrian opening; 3= open; 4= lights on/off; 5= memorisation of all 4 codes with preset functions as specified above). Press V to confirm.

3. Press the button of the TX to be memorised.

4. After the button is pressed, the display will show: TRANSMITTER MEMORISED.

5. To add another code, start the procedure again from point 2. To quit the menu, press "X".
The "X" button is effective at any point in the procedure.
If no commands are given for 10 seconds, the receiver automatically quits the memorisation mode.

DELETING A TX USING THE DISPLAY

This procedure allows a radio code to be deleted from the memory of the RX4X receiver using the transmitter memorised.

1. Access the menu **RX4X** → ✓ → **DELETE TX** → ✓

2. Press the button of the TX to be deleted when prompted.

3. After the button is pressed, the display will show: TRANSMITTER DELETED.

4. When the code has been deleted, the display will show the memory position it was cleared from.

5. To add another code, start the procedure again from point 2.
To quit the menu, press "X". The "X" button is effective at any point in the procedure.
If no commands are given for 10 seconds, the receiver automatically quits the memorisation mode.

CLEARING THE MEMORY OF THE RX4X RECEIVER

This procedure is used to clear the entire memory of the receiver.

1. Access the menu **RX4X** → ✓ → **CLEAR ALL** → ✓

2. Confirm the request by pressing "V" or exit using "X".

3. On confirmation, the display will show: MEMORY DELETED.

READING THE RECEIVER MEMORY

This procedure is used to view the radio codes present in the memory of the RX4X receiver.

1. Access the menu **RX4X** → ✓ → **READ MEMORY** → ✓

2. Use ▲ and ▼ to scroll through the codes in the memory. The number of the transmitter in the memory, the radio code saved and the relative button and channel will appear on the first line of the display, while the second line will indicate that the code can be deleted, confirming with V.

3. To quit the menu, press "X".
The "X" button is effective at any point in the procedure.

M = PRESET FUNCTIONS

MEMORY LOCK/UNLOCK

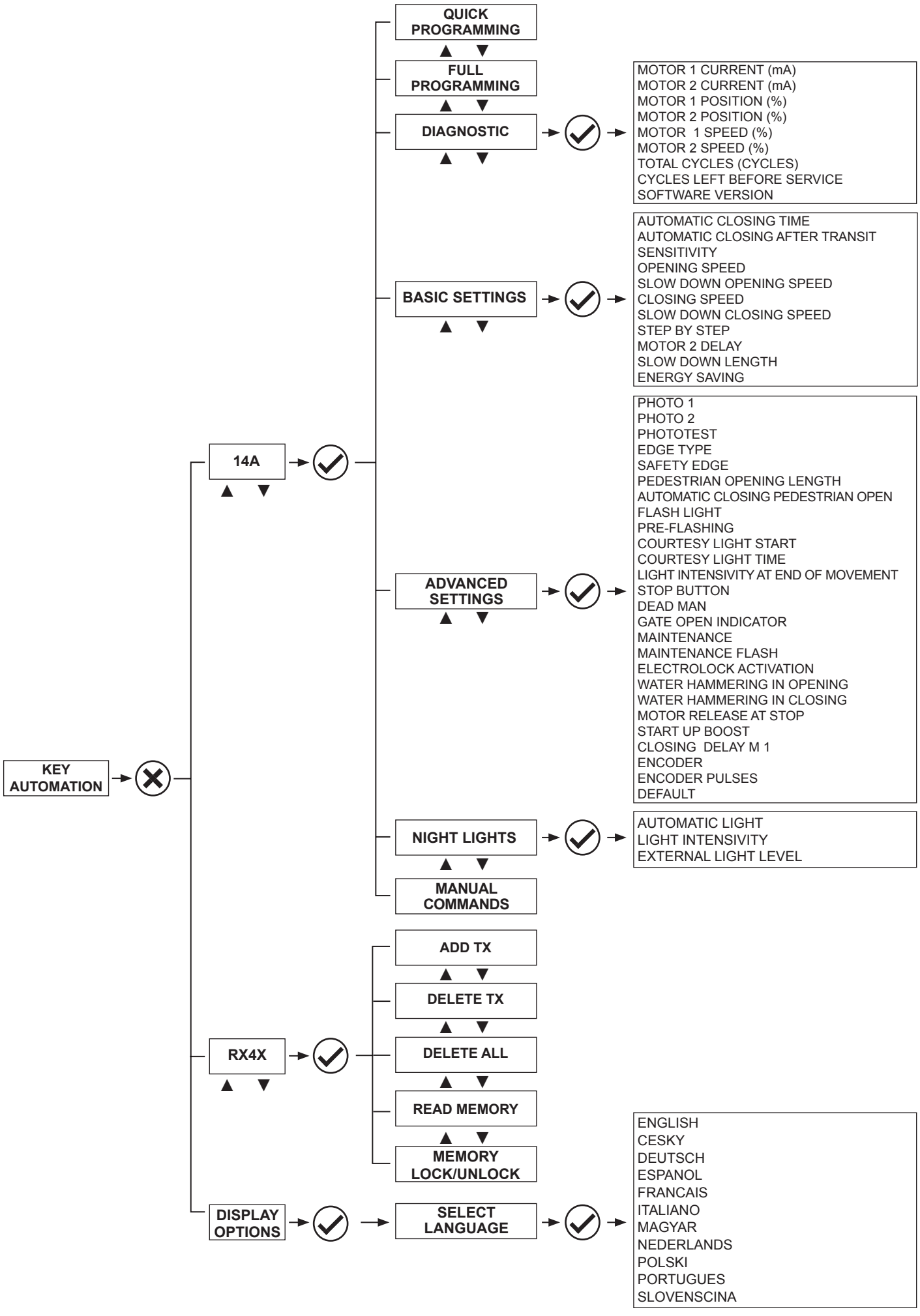
This procedure is used to lock or unlock the memory of the RX4X receiver.

1. Access the menu **RX4X** → ✓ → **MEMORY LOCK/UNLOCK** → ✓

0=OFF memory unlocked
1= ON memory locked

N.B. if the receiver is blocked by means of the XR MANAGER device, refer to the user manual of the latter.

6.3 - Programmer flow chart



7 - INSTRUCTIONS AND WARNINGS FOR THE END USER

Key Automation S.r.l. produces systems for the automation of gates, garage doors, automatic doors, roller blinds and car-park and road barriers. However, Key Automation is not the manufacturer of your complete automation system, which is the outcome of the analysis, assessment, choice of materials and installation work of your chosen installer. Every automation system is unique, and only your installer has the experience and skill required to produce a safe, reliable, durable system tailored to your needs, and above all that complies with the relevant regulatory standards. Although your automation system complies with the regulation safety level, this does not rule out the presence of “residual risk”, meaning the possibility that hazards may occur, usually due to reckless or even incorrect use. We would therefore like to give you some advice for the correct use of the system:

• before using the automation system for the first time, have the installer explain the potential causes of residual risks to you.

• keep the manual for future reference, and pass it on to any new owner of the automation system;

• reckless use and misuse of the automation system may make it dangerous: do not operate the automation system with people, animal or objects within its range of action;

• a properly designed automation system has a high level of safety, since its sensor systems prevent it from moving with people or obstacles present so that its operation is always predictable and safe. However, as a precaution children should not be allowed to play close to the automation system, and to prevent involuntary activation, remote controls must not be left within their reach.

• as soon as any system malfunction is noticed, disconnect the electricity supply and perform the manual release procedure. Never attempt repairs on your own; call in your installation engineer. In the meantime the door or gate can be operated without automation once the geared motor has been released using the release key supplied with the system. In the event of safety devices out of service arrange for repairs to the automation immediately;

• in the event of a breakdown or power supply failure: while waiting for the engineer to come (or for the power to be restored if your system is not equipped with buffer batteries), the automated system can be used just like any non-automated installation. To do this, the manual release procedure must be carried out;

• manual release and operation: first bear in mind that the release procedure can only be carried out with the door or gate stationary.

• Maintenance: Like any machine, your automation system needs regular periodic maintenance to ensure its long life and total safety. Arrange a periodic maintenance schedule with your installation engineer. Key Automation recommends that maintenance checks should be carried out every six months for normal domestic use, but this interval may vary depending on the level of use. Any inspection, maintenance or repair work must only be carried out by qualified staff.

• Never modify the automation system or its programming and setup parameters: this is the responsibility of your installation engineer.

• Testing, routine maintenance and any repairs must be recorded by the person who performs them and the documents must be conserved by the system’s owner.

The only procedures you are capable of, and which you are recommended to perform, are cleaning of the photocell glass and removal of any leaves or stones that may obstruct the automation system. To prevent anyone from activating the gate or door, release the automation system before starting. Clean only with a cloth dipped in a little water.

• At the end of its useful life, the automation system must be disposed of by qualified personnel, and the materials must be recycled or disposed of in compliance with the legislation locally in force.

If after some time your transmitter seems to have become less effective, or stops operating completely, the battery may be flat (depending on the level of use, this may take from several months up to more than a year). You will realise this because the transmission confirmation light does not come on, or only lights up for a very short time.

Batteries contain pollutants: do not dispose of them with normal waste but follow the methods specified by the local regulations.

Thank you for choosing Key Automation S.r.l.; please visit our Internet site www.keyautomation.it for further information.

NOTES

8 - DICHIARAZIONE DI CONFORMITÁ

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 Alessandro Volta, 30 - 30020 Noventa di Piave (VE) – ITALIA

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

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

Models:
Models:

14A, 14AB, 14AB2, MA24, PO24

E' 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 bassa tensione / *Low voltage Directive* 2006/95/EC
Direttiva compatibilità elettromagnetica / *EMC Directive* 2004/108/EC
Direttiva R&TTE / *R&TTE Directive* 1999/5/EC

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

EN 55014-1 + EN 55014-2
EN 61000-3-2 + EN 61000-3-3
EN 60335-1 + EN 60335-2
EN 55022
EN 301489-1:2011; EN 301489-3:2002
EN 300220-1:2012; EN 300220-2:2012
EN 60950-1

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.

Noventa di Piave (VE), 30/04/13

Amministratore Delegato
General Manager
Nicola Michelin

Key Automation S.r.l. a socio unico
Via A. Volta, 30
30020 Noventa di Piave (VE)
P.IVA 03627650264 C.F. 03627650264
info@keyautomation.it

Capitale sociale 100.000,00 i.v.
Reg. Imprese di Venezia 03627650264
REA VE 326953
www.keyautomation.it

Organizzazione con sistema di gestione certificato
ISO 9001:2008

Key Automation S.r.l.
Via A. Volta 30 - 30020 Noventa di Piave (VE)
T. +39 0421.307.456 - F. +39 0421.656.98
info@keyautomation.it - www.keyautomation.it

Instruction version
580IS14A rev.04