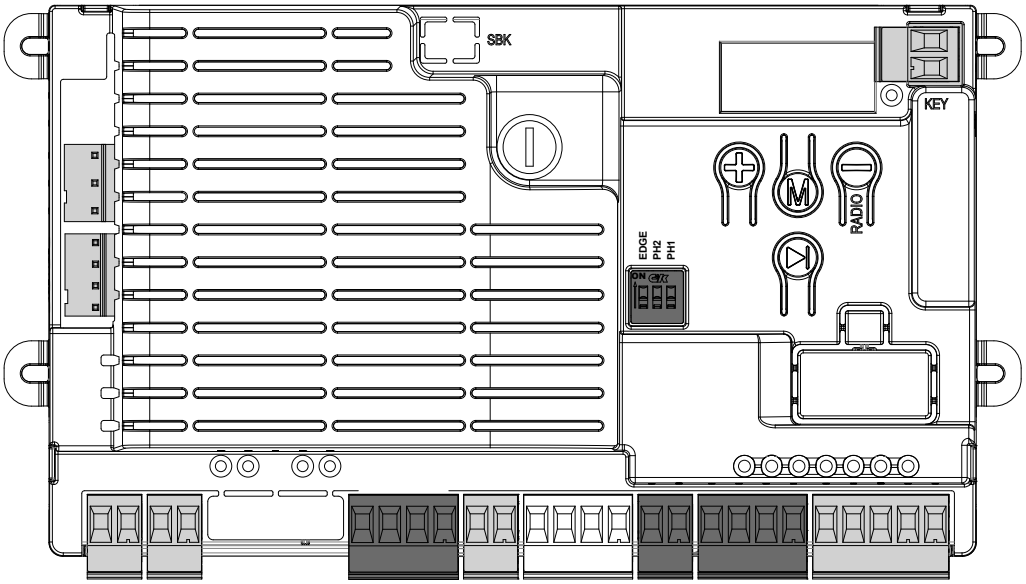
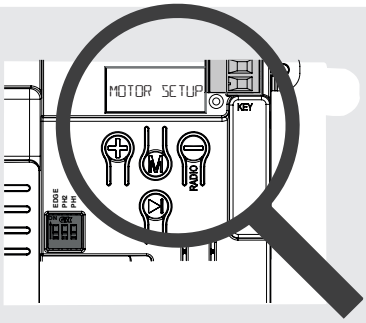
KEY AUTOMATION

Instructions and warnings for installation and use




# CT20324

**Control unit for two 24 Vdc motors, for swing gates**




MOTOR SETUP

1 = RAY2224,
2 = REP2224,
3 = UND24,UND24E
4 = STAR3024 - STAR2024,
5 = RAY4224E

CE

Management System ISO 9001

www.tuv.com ID 9105043769

EN

# INDEX

# 1 - SAFETY WARNINGS

## ⚠ WARNING !

**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 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.

## ⚠ 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 Technical Service. 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 !

**Packaging components (cardboard, plastic, etc.), duly separated, must be placed in the appropriate bins. Device components such as electronic boards, metal parts, batteries, etc. must be separated and differentiated. For the methods of disposal, the rules in force in the place of installation must be applied. DO NOT DISPOSE IN THE ENVIRONMENT!**

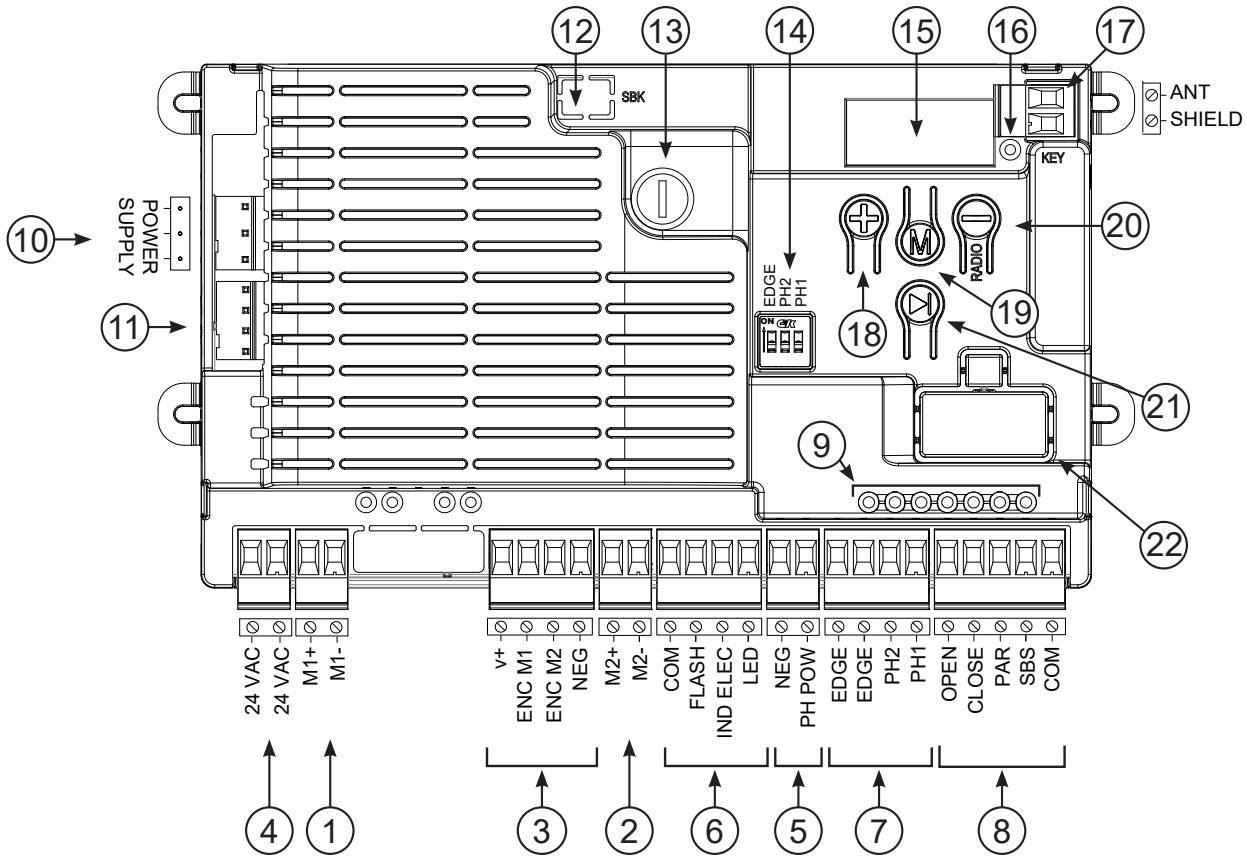
**KEY AUTOMATION S.r.l. reserves the right to amend these instructions if necessary; they and/or any more recent versions are available at www.keyautomation.com**

# 2 - INTRODUCING THE PRODUCT

## 2.1 - Description of the control unit

The CT20324 control unit is the most modern and efficient control device for two 24VDC Key Automation gear motors for swing leaf gates; any other use is to be considered improper and is therefore prohibited. The CT20324 control unit can also be configured to operate with a single motor 24VDC.

The 5-digit/14-segment display of the CT20324 control unit makes it easier to read the acronyms, facilitating programming and monitoring of the automation; the menu structure allows easy setting of work times and operating modes.




## 2.2 - Description of the connections

1. Motor 1 (M1)
2. Motor 2 (M2)
3. Encoder input M1 and M2
4. 24VAC power supply for safety devices and accessories
5. 24VDC power supply (unregulated) for safety devices (radio safety edge, photocells)
6. Connections for flashing light, electric lock/open gate indicator light, courtesy light,
7. Inputs for safety devices (Safety edge/STOP, photocells)
8. OPEN, CLOSE, PAR, SBS control inputs
9. Status LED indicators: EDGE/EDGE, PH2, PH1 safety devices (red colour); OPEN, CLOSE, PAR, SBS controls (green colour)
10. Central power supply (secondary transformer 24VAC + PE)
11. KBP/KBPN spare battery (optional)
12. SBK, fitting for connection to an energy savings module
13. 1.6 AT fuse (timed)
14. EDGE/EDGE, PH1, PH2 safety devices disabling
15. 5-digit/14-segment display
16. LED indicator (green colour) of radio functions or error reporting
17. Antenna
18. Button ⊕ (UP)
19. Button Ⓜ (MENU)
20. Button ⊖ (DOWN-RADIO)
21. Button ⏯ (SBS)
22. Optional interfaces connector (Kube, PowerBus)

## 2.3 - Models and technical characteristics

| CODE | DESCRIPTION |
|---|---|
| CT20324 | Control unit for two 24 VDC gearmotors for swing gates, in box (trasformer 150 VA, 230 V input) |
| CT20324E | Control unit for two 24 VDC gearmotors for swing gates, in box with encoder (trasformer 250 VA, 230 V input) |
| CT20324L | Control unit for two 24 VDC gearmotors for swing gates (trasformer 150 VA, 115 V input) |
| CT20324EL | Control unit for two 24 VDC gearmotors for swing gates (trasformatore 250 VA, 230 V input) |

- Electronic protection against short circuit and overload on the FLASH, IND/ELEC and LED outputs
- Protection of 24VAC and PH-POW outputs via resettable fuses
- Automatic obstacle detection
- Auto-learning of travel length
- Disabling of unused safety inputs via dip switches: it is not necessary to insert jumpers on the respective input terminals (paragraph 4.2)

| TECHNICAL SPECIFICATIONS | CT20324 | CT20324E | CT20324L | CT20324EL |
|---|---|---|---|---|
| Power Supply | 230Vac (+10% - 15%) 50/60 Hz | | 115 Vac (+10% - 15%) 50/60 Hz | |
| Nominal power | 210W maximum | 280W maximum | 210W maximum | 280W maximum |
| Maximum output current 24VAC | 200 mA (24 VAC) | | | |
| PH-POW maximum output current | 250 mA (24 VDC non-regulated) | | | |
| Maximum FLASH output power | 15 W (24 VDC) | | | |
| Maximum LED output power | 15 W (24 VDC) | | | |
| Maximum power for the “IND/ELEC” output | 5 W (24 VDC) / 15 VA (12 VDC) | | | |
| Accessory fuses | 2.0 AT (timed) | | | |
| Power line fuses | 1.6 AT | | 3 AT | 5 AT |
| Integrated radio receiver | 433.92 MHz OOK | | | |
| Antenna | wire or cable antenna RG58 | | | |
| Number of saved transmitters | 150 | | | |
| Can be used in saline, acidic or explosive atmosphere environments | NO | | | |
| IP protection class | IP54 | | | |
| Overall dimensions | 222 x 110 x 275 H mm | | | |
| Weight | 3,87 kg | 4,46 kg | 3,87 kg | 4,46 kg |

## 2.4 - List of cables required

The following table shows the cables necessary for connection of the various devices in a typical system.
The cables must be suitable for the type of installation; for example, we recommend a cable type H03VV-F for installation indoors or H05RN-F/H07RN-F if installed outdoors.

| ELECTRIC CABLE TECHNICAL SPECIFICATIONS | | |
|---|---|---|
| **CONNECTION** | **CABLE** | **MAXIMUM PERMITTED LIMIT** |
| Control unit power transformer input | 3 x 1,5 mm² | if less than or equal to 20 m |
| | 3 x 2,5 mm² | if greater than 20m, (connect the earth wire near the control unit) |
| Flashing light (FLASH)<br>Courtesy light (LED) | 3 x 0.55 mm² | 20m |
| Antenna | RG58 cable | 10 m (recommended < 5 m) |
| Electric locking (IND/ELEC) | 2 x 1.5 mm² | 10m |
| Photocells (transmitter) | 2 x 0.55 mm² | 20m |
| Photocells (receiver) | 4 x 0.55 mm² | 20m |
| Safety edge | 2 x 0.55 mm² | 20m |
| Key switch | 4 x 0.55 mm² | 20m |
| Motors power supply (M1 and M2) | 2 x 1.5 mm² | 10m |
| Encoder cables | 4 x 0.55 mm² | 10m |

# 3 - PRELIMINARY CHECKS

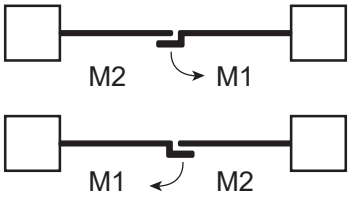
Before installing the product, perform the following checks and inspections:
check that the gate, the door or the barrier is suitable for automation; the weight and size of the gate or door and the balance of the barrier boom must be within the operating limits specified for the automation system in which the product is installed;
check that the gate or door has firm, effective mechanical safety stops;
make sure that the product fixing zone is not subject to flooding;
high acidity or salinity or nearby 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, the door or the barrier moves smoothly without any areas of greater friction or derailment risk;
check that the gate, door or the barrier 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 protected by an overload and differential safety breaker device;
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 - PRODUCT INSTALLATION

## 4.1 - Electrical connections

**⚠ WARNING ! Before making the connections, ensure that the control unit is not powered up.**

| MOTORS CONNECTION | |
|---|---|
| **Power supply connection terminal board** | |
| M1 + | Power supply of motor M1 + |
| M1 - | Power supply of motor M1 - |
| M2 + | Power supply of motor M2 + |
| M2 - | Power supply of motor M2 - |

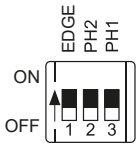



| POWER SUPPLY CONNECTOR | |
|---|---|
| L | Power supply live 230 Vac (120 Vac) 50-60 Hz |
| N | Power supply neutral 230 Vac (120 Vac) 50-60 Hz |
| ⏚ | Earth |

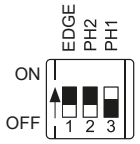
**DIP SWITCH**

Set on “ON” to disable inputs EDGE, PH1, PH2
This procedure avoids to bridge the terminal board inputs.

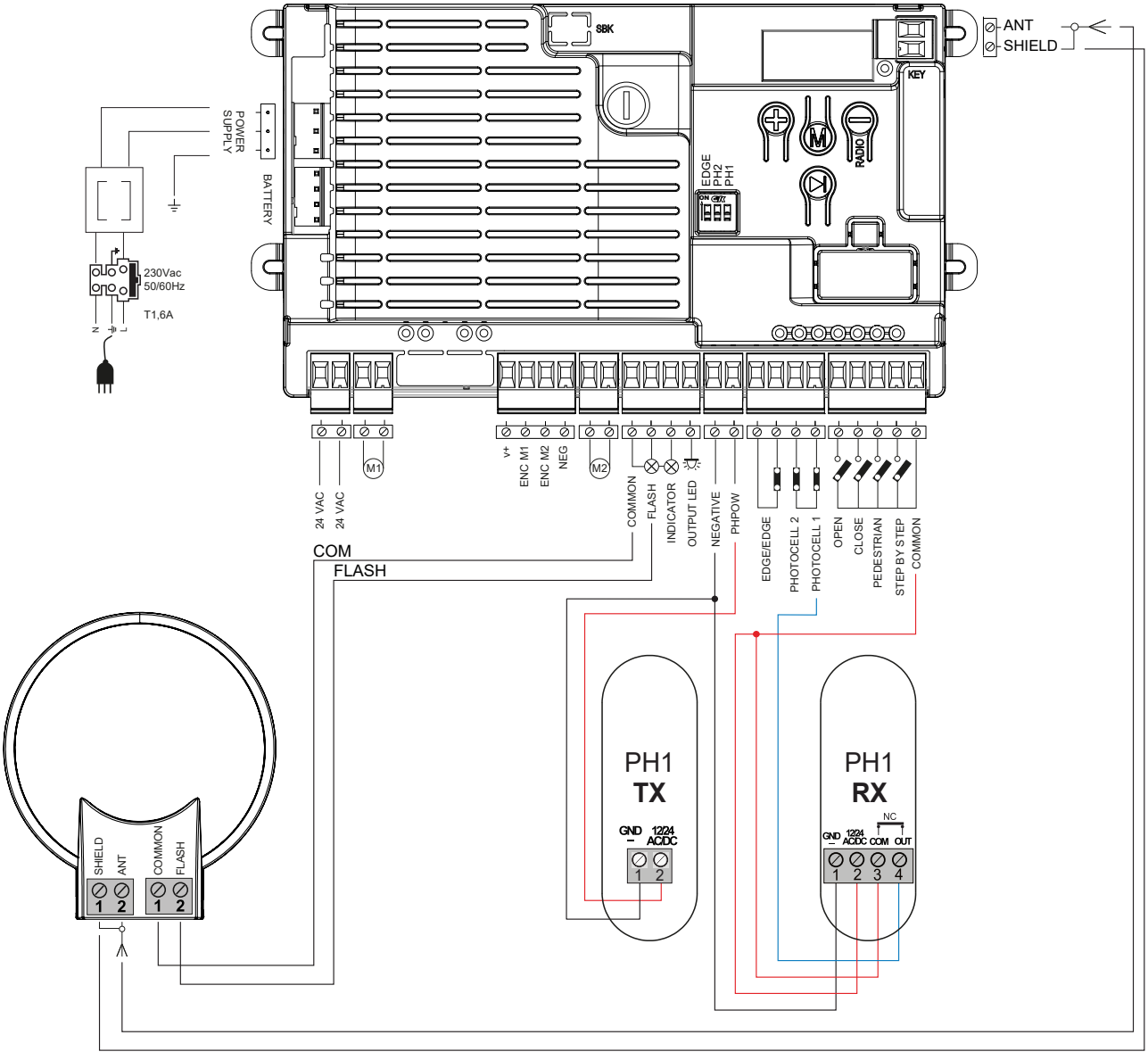
**⚠ WARNING ! with the dip switch ON, the safety devices are disabled.**



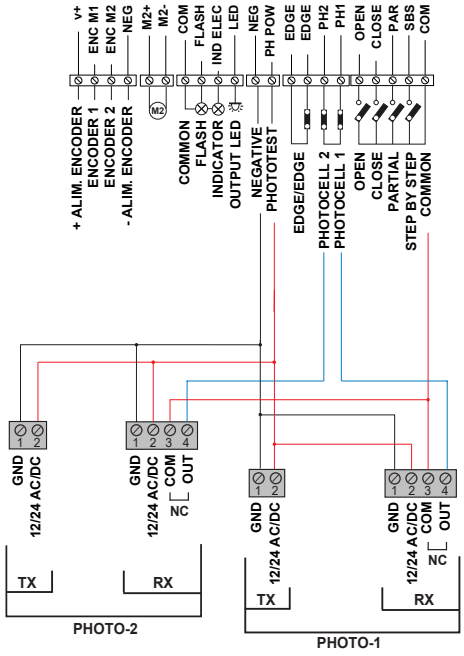

**EXAMPLE: With only 1 photocell connected set EDGE and PH2 to ON**




**To disable, follow the procedure at paragraph 4.2**

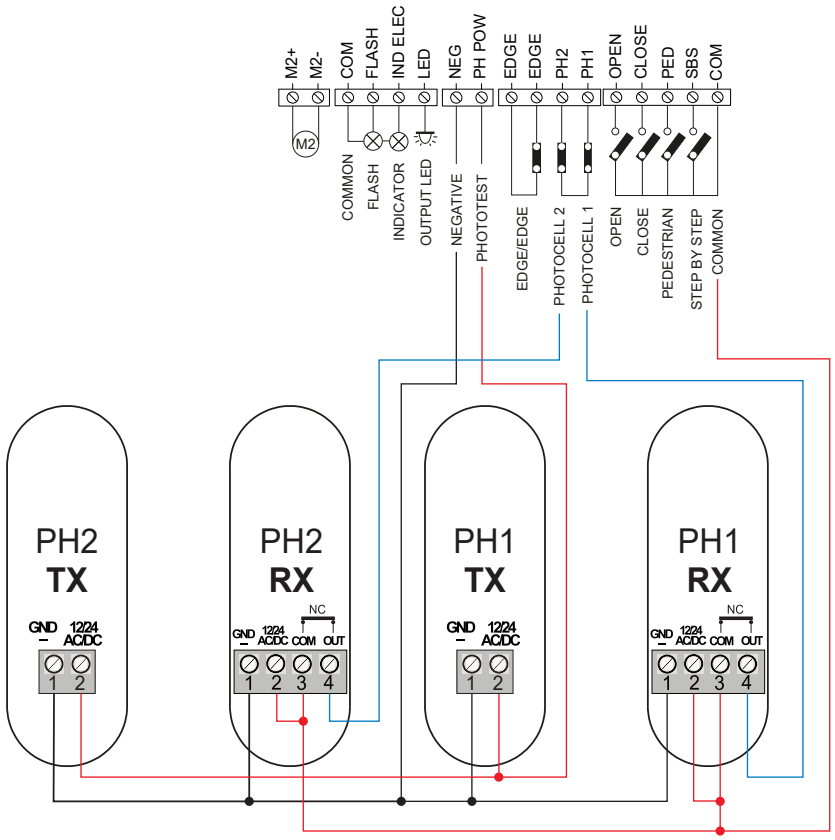


## ELECTRICAL CONNECTIONS FOR ENERGY SAVING




⚠ WARNING ! To enable STAND BY see paragraph 5.1, point 12. Only during this function PHOTOTEST is not possible

## ELECTRICAL CONNECTIONS FOR PHOTO1 AND PHOTO2




## SAFETY AND CONTROL DEVICE CONNECTORS

| | |
|---|---|
| 24 VAC | Accessory power supply 24VAC non-regulated 200mA MAX; **not active during battery operation** |
| 24 VAC | |
| COM | Common positive for FLASH - IND/ELEC - LED and accessories outputs |
| IND/ELEC | IND, gate open warning light output, 24VDC 5W MAX<br>ELEC, electric lock output 12VDC 15VA MAX<br>selectable with the INDIC LIGHT parameter |
| LED | Courtesy light output, 24VDC non-regulated 15W MAX also controllable via radio remote control |
| NEG | Negative power supply for accessories |
| PH-POW | Positive power supply for PH1 and PH2 photocells;<br>operating mode configurable with the PHOTO TEST parameter |
| EDGE/EDGE | 8k2/NC safety edge contact input; operating mode configurable with the EDGE parameter |
| EDGE/EDGE | ⚠ WARNING ! with the EDGE dip switch in the ON position the input is always disabled |
| PH2 | PH2 opening photocell NC input; at any time during opening/closing, the intervention of the photocell (opening of the contact) causes the movement to immediately stop. Closing the contact restores the opening operation. The operating modes can be configured with the PHOTO 2 SETUP parameter<br>⚠ WARNING ! with the PH2 dip switch in the ON position the input is always disabled |
| PH1 | PH1 closing photocell NC input; at any time during closing, the intervention of the photocell (opening of the contact) causes blocking and reversal of the direction of travel. While PH1 is active it is not possible to close the gate. The operating modes can be configured with the PHOTO 1 SETUP parameter<br>⚠ WARNING ! with the PH1 dip switch in the ON position the input is always disabled |
| OPEN | NO OPENING command input; MAN PRESENT function configurable with the HOLD TO RUN parameter |
| CLOSE | NO CLOSING command input; MAN PRESENT function configurable with the HOLD TO RUN parameter |
| PAR | NO PARTIAL OPENING command input;<br>MAN PRESENT function configurable with the HOLD TO RUN parameter |
| SBS | NO STEP-BY-STEP command input (SBS); upon each activation the commands AP (open) - ST (stop) - CH (close) are executed in succession; the operating modes are configurable with the SBS SETUP parameter.<br>MAN PRESENT function configurable with the HOLD TO RUN parameter |
| COM | Common positive inputs PH2, PH1, OPEN, CLOSE, PAR, SBS |
| SHIELD | Antenna - shield |
| ANT | Antenna - signal |

## 4.2 - Disabling the safety devices

### EDGE

The control unit provides (default setting) for the installation of a safety edge connected to the EDGE/EDGE inputs; in the event of a missing or incorrect connection, the operation of the automation is inhibited. In a system where a safety edge is not to be installed, its use can be disabled by setting the EDGE dip-switch to ON.

⚠ WARNING ! confirm the safety edge deactivation by pressing and holding the buttons ⊕ and ⊖ until the EDGE LED stops flashing.

### PHOTO 2

The control unit provides (default setting) for the installation of one or more photocells connected to the PH2 input, in the event of a missing or incorrect connection, the operation of the automation is inhibited. In a system where a PH2 is not to be installed, its use can be disabled by setting the PH2 dip-switch to ON.

⚠ WARNING ! confirm the PH2 deactivation by pressing and holding the buttons ⊕ and ⊖ until the PH2 LED stops flashing.

### PHOTO 1

The control unit provides (default setting) for the installation of one or more photocells connected to the PH1 input, in the event of a missing or incorrect connection, the operation of the automation is inhibited. In a system where a PH1 is not to be installed, its use can be disabled by setting the PH1 dip-switch to ON.

⚠ WARNING ! confirm PH1 input deactivation by pressing the ⊕ and ⊖ buttons simultaneously and holding them down until the PH1 led stops flashing.

## 4.3 - Display during normal operation

When first switched on, the control unit shows a scrolling text on the display indicating: board model, firmware version and serial number and as last information MOTOR SETUP to indicate that it is necessary to select the type of motor to begin configuring the system. To select the type of motor, scroll the list with the UP ⊕ and DOWN-RADIO ⊖ buttons;

at the motor concerned, press and hold down the MENU button Ⓜ until DONE appears on the display.

⚠ WARNING ! The ADVANCED PARAMETERS (paragraph 5.2) table shows the correspondence between the motor model and the numbers on the display. The following table shows the messages displayed during normal operation of the automation:

| MESSAGE | MEANING |
|---|---|
| LEARN TODO | The door travel has not been learned; perform the auto-learning procedure |
| READY | Gate closed, control panel restarted |
| OPEN ING | The gate is opening |
| CLOSE ING | The gate is closing |
| STOP OPEN | The gate was stopped during the opening manoeuvre |
| STOP CLOSE | The gate was stopped during the closing manoeuvre |
| FOTO 1 | PH1 intervention (photocell 1) |
| FOTO2 | PH2 intervention (photocell 2) |
| ALIGN MENT | The automation is performing the realignment procedure |
| OPEN | Gate open, automatic closing timer not active |
| PAR TIAL | The gate is performing a partial opening |
| PART OPEN | The gate is stopped in the partially open position |
| TIME CLOSE | The gate has reached the open position and automatic re-closing is active; the flashing dash indicates that the countdown is active. During the last ten seconds, the seconds remaining until reclosing are indicated |
| TIME PART | The gate has been opened with the PAR command and the automatic re-closing timer from partial opening is active; during the last ten seconds, the seconds remaining until re-closing are indicated |
| LEARN STOP | Auto-learning procedure blocked due to safety intervention or intentional stop |
| LEARN OPEN 1 | Auto-learning of leaf 1 opening travel |
| LEARN OPEN2 | Auto-learning of leaf 2 opening travel |
| LEARN CLOS 1 | Auto-learning of leaf 1 closing travel |
| LEARN CLOS2 | Auto-learning of leaf 2 closing travel |
| SLOW OPEN 1 | Personalised learning of the slowdown point during leaf 1 opening |
| SLOW OPEN2 | Personalised learning of the slowdown point during leaf 2 opening |
| SLOW CLOS 1 | Personalised learning of the slowdown point during leaf 1 closing |
| SLOW CLOS2 | Personalised learning of the slowdown point during leaf 2 closing |

### 4.3.1 - Error messages on the display

To cancel the error message on the display, after having eliminated the cause of the anomaly, perform a complete opening or closing manoeuvre, i.e. until the relevant limit switch is reached. Alternatively, briefly press the Ⓜ MENU button (the automation does not perform any movement).

| MOTOR OVERLOAD | The current of a motor has increased very rapidly |
|---|---|
| OVER LOAD 1 | 1. The gate has struck an obstacle |
| OVER LOAD2 | 2. Excessive friction in the movement of the leaf |
| **SAFETY EDGE** | **The control unit has detected the activation of the safety edge** |
| EDGE | 1. The safety edge is active |
| | 2. The safety edge is not connected correctly |
| **PHOTOCELL TEST** | **The photocell or safety edge test has failed** |
| FOTO TEST | 1. Check the correct functioning of the photocells |
| | 2. Check the photocell connections |
| **ENCODER** | **The physical encoder does not respond** |
| ENC ERROR | 1. Check the correct operation of the encoder |
| | 2. Check the correct connection of the encoder |

### 4.3.2 - Error messages on flashing light

The events reported in the following table are signalled by the flashing light and the KEY LED present in the control unit.

| FLASHING INDICATION AND LED KEY ON CONTROL UNIT | EVENT | DESCRIPTION |
|---|---|---|
| 2 quick flashes + pause + 1 flash | auto-learning | Auto-learning phase in progress |
| 4 quick flashes + pause, for three times | Obstacle detected | A leaf has struck an obstacle |
| 2 quick flashes + pause, for three times | Photo1 / Photo2 | A photocell has been activated |
| 5 quick flashes + pause, for three times | Safety edge | The safety edge has been activated |
| 3 quick flashes + pause, for three times | The photo test has failed | The photocells or sensitive edge test has failed |
| 6 quick flashes + pause, for three times | Short circuit overload | Anomaly in one of the FLASH, ELS/SCA or LED outputs |
| 7 quick flashes + pause, for three times | Encoder Error | M1 or M2 motor encoder anomaly |

### 4.3.3 - Status messages on display

Repeatedly pressing the ⊕ (UP) button displays additional information described in the following table. To return to the normal status, press the Ⓜ (MENU) button.

| DISPLAY | MEANING |
|---|---|
| READY, OPEN ING, EDGE, FOTO TEST, ecc. | Automation status |
| NCY 500 | Total number of complete opening + closing manoeuvres |
| I M1: 1200 | Instantaneous current absorbed by motor M1, given in mA |
| I M2: 1200 | Instantaneous current absorbed by motor M2, given in mA |
| CT20324 FW 2.0 SN 635A33F1 | Card type – firmware version – card serial number |

## 4.4 - Autolearning of the travel stroke

Upon the first start-up or in the event of a modification of the equipment model, which involves restoring the factory values, the message LEARN TO DO appears on the display and the auto-learning procedure of the operating parameters must be performed (width of the movement angle of the doors, slowdown points in opening and closing, ...).

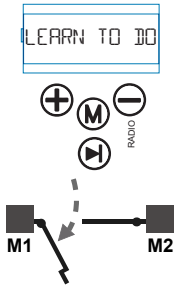
⚠ WARNING ! ONLY during the first installation the display will show MOTOR SETUP, to select the type of motor installed.
Select the type of motor with (UP) and (DOWN-RADIO) and confirm by keeping the (MENU) button pressed until DONE appears on the display: 1 = RAY2224, 2 = REP2224, 3 = UND24, 4 = STAR3024 - STAR2024, 5 = RAY4224E

⚠ WARNING ! Select the correct motor before starting the auto-learning procedure (MOTOR SETUP, paragraph 5.2 - Advanced parameters).

## 4.4.1 - Autolearning of the travel stroke and main parameters

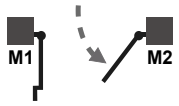
1. Unlock the gear motors, bring the doors to approximately half their travel and lock the gear motors again.

2. To start the learning procedure, press and hold the ⊕ (UP) and Ⓜ (MENU) buttons at the same time; after approximately two seconds the leaf relating to M1 begins to open slowly; the display shows LEARN OPEN 1.




⚠ WARNING ! If the leaf moves in the closing direction, stop the movement by pressing the ⊖ (DOWN-RADIO) button; press the ⏯ (SBS) button to resume the learning procedure with the direction of movement reversed.

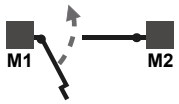
3. Once the maximum opening point has been reached, the door relating to M1 stops; the leaf relating to M2 slowly starts to open; the display shows OPEN2 LEARN.




⚠ WARNING ! If the leaf moves in the closing direction, stop the movement by pressing the ⊖ (DOWN-RADIO) button; press the ⏯ (SBS) button to resume the learning procedure with the direction of movement reversed.

4. Once the maximum opening point has been reached, the leaf relating to M2 stops; after approximately 2 seconds it slowly starts to close; the display shows CLOSE2 LEARN


5. The auto-learning operation of the leaf travel relative to M2 ends when the closing point is reached. After approximately two seconds the leaf relating to M1 slowly begins to close; the display shows CLOSE 1 LEARN.




6.The auto-learning operation of the leaf travel relative to M1 ends when the closing point is reached. The auto-learning operations are completed.


⚠ WARNING ! The travel auto-learning operations must be fully and correctly completed before putting the equipment into operation; their interruption is only possible by intervening on the safety devices (EDGE/STOP, PH2, PH1) or by cutting off power to the control unit.

7. After having correctly completed the travel auto-learning procedures, perform a few complete opening and closing manoeuvres of the gate to check its correct functioning.

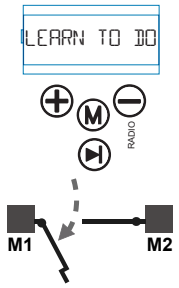
After having successfully completed the auto-learning it will be possible to modify the operating parameters by accessing the BASE and/or ADV (paragraph 5).

## 4.4.2 - Autolearning of the travel stroke and main parameters, with customised decelerations

The default low speed travel length is 20% of the total travel length. It is possible to change the default value of the travel width performed at low speed, both in opening and closing, by acting on the LENGTH SLOW parameter in the BASE menu by selecting P (customised). See paragraph 5.1

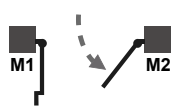
1. Unlock the gear motors, bring the doors to approximately half their travel and lock the gear motors again.

2. To start the learning procedure, simultaneously press and hold the ⊕ (UP) and Ⓜ (MENU) buttons for approximately two seconds; after about two seconds the leaf relating to M1 begins to open slowly; the display shows LEARN OPEN 1.



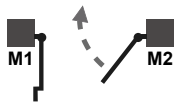

⚠ WARNING ! If the leaf moves in the closing direction, stop the movement by pressing the ⊖ (DOWN-RADIO) button; press the ⏯ (SBS) button to resume the learning procedure with the direction of movement reversed.

3. Once the maximum opening point has been reached, the leaf relating to M1 stops; the leaf relating to M2 starts to open slowly; The display shows OPEN2 LEARN.

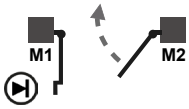


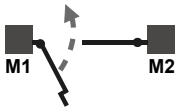
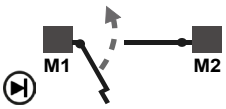
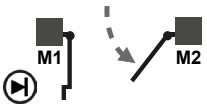

⚠ WARNING ! If the leaf moves in the closing direction, stop the movement by pressing the ⊖ (DOWN-RADIO) button; press the ⏯ (SBS) button to resume the learning procedure with the direction of movement reversed.

4. Once the maximum opening point has been reached, the leaf relating to M2 stops; after approximately 2 seconds it slowly starts to close; the display shows CLOSE2 LEARN.




5. Having reached the point where it is necessary to start the slowing down phase (closing), press the button ⏯ (SBS); the display shows CLOSE SLOW.



| | |
|---|---|
| 6. The auto-learning operation of the leaf travel relative to M2 ends when the closing point is reached. After approximately two seconds the leaf relating to M1 slowly begins to close; the display shows CLOSE 1 LEARN. |   |
| 7. Having reached the point where it is necessary to start the slowing down phase (closing), press the button ⏯ (SBS); the display shows CLOS 1 SLOW. |   |
| 8. The auto-learning operation of the leaf travel relative to M1 ends when the closing point is reached.<br>After approximately 2 seconds the M1 leaf begins to open again and the display shows OPEN 1 LEARN. |   |
| 9. Once the point has been reached where it is necessary to begin the slowing down phase of opening of the M1 leaf press the button ⏯ (SBS); the display shows OPEN 1 SLOW. |   |
| 10. Once the maximum opening point has been reached, the leaf relating to M1 stops; subsequently the relevant leaf opening begins at M2; the display shows OPEN2 LEARN. |   |
| 11. Once the point has been reached where it is necessary to begin the slowing down phase of opening of the M2 leaf press the button ⏯ (SBS); the display shows OPEN2 SLOW. |   |
| 12. Once the maximum opening point has been reached, the leaf relating to M2 stops; subsequently the closing manoeuvre of both doors is performed. When both doors have reached the closed position, the auto-learning procedure of the travel with personalised slowdown points is finished.<br>⚠ WARNING ! If during the various opening/closing manoeuvres one of the deceleration points is not set, it will automatically be set to 20% of the total travel length.<br>⚠ WARNING ! The travel auto-learning operations must be fully and correctly completed before putting the equipment into operation; their interruption is only possible by intervening on the safety devices (EDGE/STOP, PH2, PH1) or by cutting off power to the control unit. |   |
| 13. After having correctly completed the travel auto-learning procedures, perform a few complete opening and closing maneuvers of the gate to check its correct functioning. | |
| After having successfully completed the auto-learning it will be possible to modify the operating parameters by accessing the BASE and/or ADV (paragraph 5). | |

## 4.5 - Radio remote control management

To save the buttons of a radio remote control, delete them or delete all the saved radio remote controls, use the RADIO menu. To access the RADIO menu, press the ⊖ (DOWN-RADIO) button for approximately two seconds; the wording RADIO MENU appears alternatively on the display.
**NOTE:** the control unit exits the RADIO menu after seven seconds of inactivity or by briefly pressing the Ⓜ (MENU) button.

**NOTE:** to facilitate saving operations, thereby minimising any interference, it is advisable to disconnect the receiver's antenna wire; therefore, the procedure only works near the control panel itself.

⚠ WARNING ! Once the operations have been completed, reconnect the antenna wire of the control panel receiver.

### 4.5.1 - Memorisation of buttons of a radio remote control

| | |
|---|---|
| 1. Exit any menu, press and hold the button ⊖ (DOWN-RADIO) until the display shows, alternatively, RADIO MENU. |   |
| 2. Press and release the (DOWN-RADIO) button ⊖ a number of times equal to the function to be activated: once for the STEP BY STEP output (LEARN SBS), twice for the PARTIAL output (LEARN PAR),three times for the ONLY OPEN output (LEARN OPEN), 4 times for the LIGHT ON/OFF output (LEARN LIGHT), 5 times for the LEARN ALL OUTPUT (key 1= SBS, key 2 = PARTIAL, key 3 = ONLY OPEN, key 4 = LIGHT ON/OFF).<br>**NOTE:** if the courtesy lights are activated by radio remote control, they will only be deactivated by radio remote control. |  |
| 3. Immediately after pressing the button ⊖ (DOWN-RADIO), the KEY LED briefly flashes a number of times corresponding to the selected function interspersed with a pause of approximately one second. |   |
| 4. Near the control unit, within seven seconds press the button on the radio remote control to which to associate the selected function; keep the radio remote control button pressed for a few seconds.<br>**NOTE:** for the pre-set function (5) press any button |   |

| | |
|---|---|
| 5. A long flash (approximately three seconds) of the KEY LED confirms correct storage.<br>⚠ WARNING ! If the KEY LED emits a series of short flashes, the radio remote control button you are trying to memorise is already present in the memory.<br>**NOTE:**after having memorise the radio remote control button, within seven seconds, it is possible to associate another button of the same radio remote control or any button of another radio remote control, to the same function, repeating the operations from point 3. |  |

### 4.5.2 - Deletion of a memorised button of a radio remote control

| | |
|---|---|
| Exit any menu, press and hold the button ⊖ (DOWN-RADIO) until the display Shows alternatively, RADIO MENU. |  |
| 1. Press and hold the button ⊖ (DOWN-RADIO) until the KEY LED lights up; release the button. |  |
| 2. Within seven seconds, press and hold the button of the radio remote control to be deleted from the receiver's memory until the KEY LED starts flashing; release the button. |  |
| 3. Confirm deletion of the radio remote control by pressing the button ⊖ (DOWN-RADIO) |  |
| 4. A long flash of the KEY LED indicates that the radio remote control has been deleted. |  |
| 5. The control unit exits the RADIO MENU after seven seconds of inactivity or by briefly pressing the button Ⓜ (MENU) |  |
| If the transmitter you wish to delete was originally memorized using the LEARN ALL output (see paragraph 4.5.1, phase 2), the deletion procedure mentioned above will delete all the functions associated with the buttons of that transmitter. | |

### 4.5.3 - Deletion of the entire receiver memory

| | |
|---|---|
| Exit any menu, press and hold the ⊖ (DOWN-RADIO) button until the display alternately shows RADIO MENU. |  |
| 1. Press and hold down the ⊖ (DOWN-RADIO) button until the KEY LED lights up (approximately three seconds); keep the button ⊖ (DOWN-RADIO) pressed until the KEY LED turns off; release the button. |  |
| 2. After releasing the button the KEY LED starts to flash slowly; count the flashes. |  |
| 3. At the third flash, briefly press the button ⊖ (DOWN-RADIO). |  |
| 4. A long flash of the KEY LED indicates that all the radio remote controls have been deleted. |  |
| 5. The control unit exits the RADIO MENU after seven seconds of inactivity or by briefly pressing the button Ⓜ (MENU) | |

### 4.5.4 - Memorisation of a button of a new radio remote control using a radio remote control already saved in memory

| | |
|---|---|
| It is possible to add the button of a new radio remote control to a control unit in which at least one radio remote control has already been memorised | |
| 1. Near the control unit, press and hold the button of the new radio remote control to be added to the control unit for at least five seconds |  |
| 2. Near the control unit, press and hold down for at least three seconds the button of the already memorised radio remote control to which the function to be duplicated on the new radio remote control is associated.<br>**NOTE:** if step 1. has been correctly performed, the automation does not perform any manoeuvre and it is possible to proceed with memorisation. |  |
| 3. Near the control unit, press and hold the same button on the new radio remote control used in point 1 for at least three seconds. |  |
| 4. Near the control unit, press and hold the same button on the old radio remote control used in point 2 for at least three seconds.<br>**NOTE:** the procedure has been correctly performed if the automation executes the command just memorised. |  |
| If the procedure is not completed, after a few seconds the control panel receiver returns to normal operation. | |

### 4.6 - Factory parameters reset

To return all the parameters to their default values or to change the type of equipment on which the control panel is installed, proceed as follows:

1. Press and hold the button Ⓜ (MENU); the display shows in sequence BASE ADV; release the button near the text ADV.
2. Scroll through the menu items with the buttons ⊕ (UP) and ⊖ (DOWN-RADIO) until reaching MOTOR SETUP
3. Press and hold the button Ⓜ (MENU); release the button when the display starts flashing; the number displayed indicates the type of motor in use.
4. Select with the buttons ⊕ (UP) and ⊖ (DOWN-RADIO) the type of motor; press and hold the button Ⓜ (MENU). The display shows a countdown from 50 to 0; release the button when the text DONE appears.
5. The control unit exits the MENU after seven seconds of inactivity or by briefly pressing the Ⓜ (MENU) button.

⚠ WARNING ! If the type of motor is changed, all the values are returned to the factory value and it is necessary to perform a new auto-learning procedure for the travel.

## 5 - SYSTEM CUSTOMISATION

The configuration menus of the equipment operating functions are divided into BASE and ADV (basic/advanced). The following tables show the description of each basic parameter with the respective minimum, maximum and default values.

1. Press and hold the button Ⓜ (MENU); the display shows in sequence BASE and ADV, release the button at the wording BASE to access the basic menu.
2. Scroll through the menu items with the buttons ⊕ (UP) and ⊖ (DOWN-RADIO) until reaching the desired parameter
3. Press and hold the button Ⓜ (MENU) until the display flashes; release the buttonⓂ (MENU)
4. To change the value, use the buttons ⊕ (UP) and ⊖ (DOWN-RADIO) ; to confirm the new value press and hold the button Ⓜ (MENU) until the display stops flashing
5. To exit the menu, briefly press the button Ⓜ (MENU)

**NOTE:** to view the value of any parameter simply enter the relevant menu (BASE or ADV) using steps 1 and 2 of the procedure just described. Once the desired parameter has been identified, the display alternately shows the name of the parameter and the value. To exit the menu, briefly press the button Ⓜ (MENU)

### 5.1 - Basic parameters

| | PARAMETERS | DESCRIPTION | DEFAULT | MIN | MAX | UNIT |
|---|---|---|---|---|---|---|
| 1 | AUTO CLOSE | Automatic re-closing time (0 = off) | 0 | 0 | 900 | s |
| 2 | PHOTO CLOSE | Re-closing time after the transit on PH1 (0 = off) | 0 | 0 | 30 | s |
| 3 | REACT TIME | Obstacle sensitivity<br>0 = maximum impact force<br>10 = minimum impact force | 3 | 0 | 10 | |
| 4 | OPEN SPEED | Door speed in opening<br>1 = minimum speed<br>5 = maximum speed | 4 | 1 | 5 | |
| 5 | SL-OP SPEED | Door speed during the slowing down phase in opening<br>1 = minimum speed<br>5 = maximum speed | 1 | 1 | 5 | |
| 6 | CLOSE SPEED | Door speed in closing<br>1 = minimum speed<br>5 = maximum speed | 4 | 1 | 5 | |
| 7 | SL-CL SPEED | Door speed during the slowing down phase in closing<br>1 = minimum speed<br>5 = maximum speed | 1 | 1 | 5 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 8 | SBS SETUP | Determines the operating mode of the step-by-step control (SBS)<br>0 = normal OPEN-STOP-CLOSE-STOP-OPEN-STOP…<br>1 = alternate OPEN-STOP-CLOSE-OPEN-STOP-CLOSE…<br>2 = alternate OPEN-CLOSE-OPEN-CLOSE…<br>3 = condominium mode 1; from an open position, the closing manoeuvre begins when the automatic re-closing timer expires<br>**NOTE:** closure does not take place if AUTOCLOSE = 0<br>4 = condominium mode 2; an SBS command performs the closing manoeuvre only if the leaf is in the open position. | 0 | 0 | 4 | |
| 9 | DELAY LEAF2 | Delay of the leaf relative to M2 during opening | 2 | 0 | 300 | |
| 10 | LENGH SLOW | Travel width at low speed (slowing down phase) both during opening and closing<br>P = customised (paragraph 4.4.2) | 20 | 0 | 100 | % |
| 11 | BLACK OUT | Determines the behaviour of the control panel when switched on<br>0 = no action<br>1 = executes, if possible, the closing command | 0 | 0 | 1 | |
| 12 | STAND BY | If active, in closed position, disables PH-POW power supply | 0 | 0 | 1 | |
| 13 | 1/2 MOTOR | Number of system doors | 2 | 1 | 2 | |

## 5.2 - Advanced parameters

| | PARAMETERS | DESCRIPTION | DEFAULT | MIN | MAX | UNIT |
|---|---|---|---|---|---|---|
| 1 | FOTO 1 SETUP | Determines the behaviour of the automation, starting from the closed position,<br>0 = if PH1 is engaged it does not execute any opening command<br>1 = if PH1 is engaged it still executes the opening command | 1 | 0 | 1 | |
| 2 | FOTO2 SETUP | Verifies the engaged status of PH2<br>0 = active both during the opening and closing maneuvers<br>1 = only active during the opening manoeuvre | 0 | 0 | 1 | |
| 3 | PHOTO TEST | Photocell functionality test<br>0 = no tests<br>1 = checks the functionality of the photocells connected to terminal PH1<br>2 = checks the functionality of the photocells connected to terminal PH2<br>3 = checks the functionality of the photocells connected to terminals PH1 and PH2 | 0 | 0 | 3 | |
| 4 | TYPE EDGE | Determines the type of safety edge connected to the EDGE/ EDGE terminals<br>0 = STOP NC contact<br>1 = 8k2 safety edge<br>2 = NC sensitive edge | 0 | 0 | 2 | |
| 5 | SETUP EDGE | Determines in which situations<br>the intervention of the safety edge connected to the EDGE/ EDGE inputs should be evaluated<br>0 = status of the EDGE/EDGE input evaluated only during the closing manoeuvre; the intervention involves a total opening manoeuvre<br>1 = intervenes both in opening and closing stopping the automation and reversing the direction of travel for approximately 2 seconds<br>2 = intervenes both in opening and closing stopping the automation and reversing the direction of travel for approximately 0.5 seconds | 0 | 0 | 2 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 6 | TEST EDGE | Safety edge test<br>0 = disabled<br>1 = active | 0 | 0 | 1 | |
| 7 | SETUP PART | Length of the partial opening travel (PAR) expressed as a percentage of the total travel.<br>**NOTE:** only the leaf relating to the M1 motor opens | 50 | 0 | 100 | % |
| 8 | CLOSE PART | Automatic re-closing time from partial opening PAR (0 = off) | 0 | 0 | 900 | s |
| 9 | FLASH SETUP | Determines the behaviour of the FLASH output<br>0 = output always active (not flashing) during the opening and closing manoeuvre<br>1 = output flashing during the opening and closing manoeuvre | 1 | 0 | 1 | |
| 10 | PRE SETUP | Determines the pre-flashing modes of the FLASH output (deactivated if PRE TIME = 0)<br>0 = pre-flashing before each opening and closing manoeuvre<br>1 = pre-flashing before each closing manoeuvre<br>2 = pre-flashing before each opening manoeuvre | 0 | 0 | 2 | |
| 11 | PRE TIME | Determines the duration of the pre-flashing (0 = off) | 0 | 0 | 20 | s |
| 12 | SETUP LIGHT | Courtesy light configuration<br>0 = on during the manoeuvre and, at the end of the manoeuvre, for the TIME TIME LIGHT<br>1= on if the gate is not closed for the TIME TIME LIGHT with the gate closed.<br>2 = lit for a TIME LIGHT time after each command (OPEN, CLOSE, PAR, SBS) | 0 | 0 | 2 | |
| 13 | TIME LIGHT | Courtesy light switching on time.<br>**NOTE:** the courtesy light can also be turned on and off by radio remote control; if turned on by radio emote control, it can only be turned off by radio remote control. | 0 | 0 | 900 | s |
| 14 | HOLD TORUN | Enables the “man present” functionality on the SBS, PAR, OPEN and CLOSE inputs<br>⚠ WARNING ! enabling the function, the operation of the radio remote controls is inhibited | 0 | 0 | 1 | |
| 15 | INDIC LIGHT | Determines the operation of the IND/ELEC output<br>0 = off<br>1 = gate open indicator active if the gate is not closed<br>2 = proportional gate open indicator<br>- Slow flashing during opening<br>- Fast flashing during closing<br>- Two flashes + pause if stopped and not closed<br>3 = electric lock<br>4 = magnetic lock, output active if the gate is closed.<br>⚠ WARNING ! interface the magnetic lock with a relay with 24VDC coil | 0 | 0 | 4 | |
| 16 | CYCLE SERVI | Specifies the number of manoeuvres before reporting a maintenance request.<br>**NOTE:** the signalling occurs using the FLASH output; if closed it flashes continuously | 10 | 0 | 200 | X1000 cycles |
| 17 | SETUP SERVI | Enables maintenance request reporting<br>0 = disabled<br>1 = active | 0 | 0 | 1 | |
| 18 | ELECT TIME | Electric lock activation time or magnetic lock deactivation time. | 2 | 1 | 10 | s |
| 19 | EL-OP SETUP | Water hammer on opening (0 = off).<br>When closed, it pushes to close before opening; it is used to facilitate the release of the electric lock | 0 | 0 | 100 | 100 ms |
| 20 | EL-CL SETUP | Water hammer on closing (0 = off).<br>At the end of the closing manoeuvre, the motor is kept active for the set time; it is used to facilitate the coupling of the electric lock. | 0 | 0 | 100 | 100 ms |
| 21 | RELEA TIME | Release on opening and closing limit switches.<br>0 = no release<br>10 = maximum release<br>In the presence of light gates, it reduces the bending of the leaf. | 0 | 0 | 10 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 22 | BOOST SETUP | If active, it provides maximum acceleration upon starting<br>0 = disabled<br>1 = active | 0 | 0 | 1 | |
| 23 | DELAY LEAF 1 | Leaf delay relating to M1 in closing from open gate. | 1 | 0 | 20 | s |
| 24 | ENCOD SETUP | Sets the encoder type<br>0 = virtual encoder<br>1 = physical encoder<br>**NOTE:** the value depends on the type of motor selected. | 0 | 0 | 1 | |
| 25 | MOTOR SETUP | Determine the type of automation on which the control unit is installed:<br>**1 = RAY2224,**<br>**2 = REP2224,**<br>**3 = UND24,UND24E***<br>**4 = STAR3024 - STAR2024,**<br>**5 = RAY4224E*** | 1 | 1 | 4 | |

* Available on CT20324E and CT20324EL only. For UND24E, manually set ENCOD SETUP to 1.

# 6 - 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 EN 12453 standard which specifies the test methods for gate and door automation systems.

## 6.1 - 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 stationery when released in any position;

check that all connected devices (photocells, safety 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 EN12453 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.

## 6.2 - 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 sign 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.

# 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 malfunctions or power failures: while waiting for the engineer to come (or for the power to be restored if your system is not equipped with buffer batteries), the door or gate 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 stationery.

• 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 dismantled 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 remote control 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.com for further information.

# 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 s.r.l., via Meucci 23, 30027 San Donà di Piave (VE) – ITALIA

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

**CT20324**
Centrale di comando per l'automazione di cancelli a 1 o 2 motori 24Vdc, con ricevente 433,92 MHz integrata
*Control unit for gates up to 2 24Vdc motors, with embedded 433,92 MHz receiver*

Models:
*Models:*

CT20324, CT20324L, CT20324E, CT20324EL

E' conforme a quanto previsto dalle seguenti direttive comunitarie:
*Complies with the following community (EC) regulations:*

Direttiva macchine / *Machinery Directive 2006/42/EC*
Direttiva compatibilità elettromagnetica / *EMC Directive 2014/30/EU*
Direttiva bassa tensione / *Low voltage Directive 2014/35/EU*
Direttiva radiofrequenza */ RED Directive 2014/53/EU*
Direttiva RoHS / *RoHS Directive 2011/65/EU*

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

EN IEC 55014-1:2021, EN IEC 55014-2:2021
EN 60335-1:2012+A15:2021, EN 60335-2-103:2015
EN IEC 61000-3-2:2019, IEC 61000-3-3:2013 + A2:2021
EN IEC 61000-6-1:2019, EN IEC 61000-6-3:2021
EN ISO 13849-1:2015, EN ISO 13849-2:2012
EN 12453:2017 + A1:2021
ETSI EN 301 489-1 V2.2.3:2019, ETSI EN 301 489 V2.3.2:2023
EN 62233:2008

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), 01/06/23

Amministratore Delegato
*General Manager*
Nicola Michelin

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