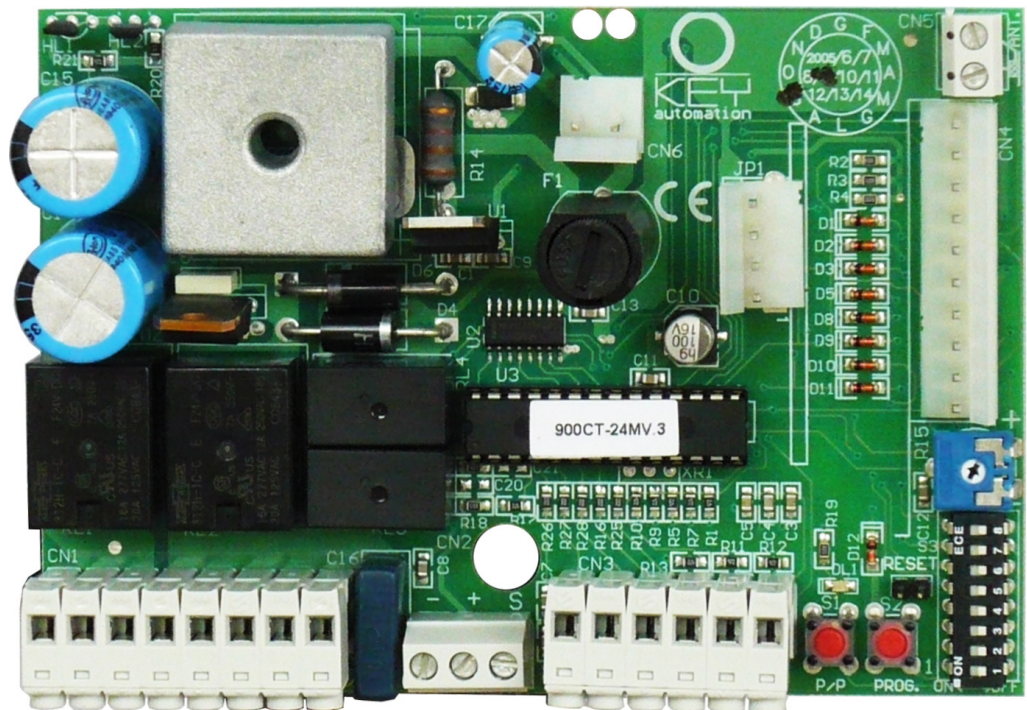


Centrale elettronica
Electronic control unit
Centrale électronique
Elektronische Steuereinheit
Central electrónica
Central electrónica
Elektroniczna jednostka sterująca
Electrische zekering

900CT-24M



- Ⓜ IT MANUALE ISTRUZIONI
- Ⓜ GB INSTRUCTION MANUAL
- Ⓜ F MANUEL D'EMPLOI
- Ⓜ D BEDIENUNGSANLEITUNG
- Ⓜ E MANUAL DE INSTRUCCIONES
- Ⓜ P MANUAL DE INSTRUÇÕES
- Ⓜ PL INSTRUKCJA OBSŁUGI
- Ⓜ NL GEBRUIKSHANDLEIDING



Key Automation S.p.A



Organizzazione con Sistema
di Gestione certificato
Company with Management
System certified

ISO 9001:2008

SINCERT

⚠ WARNING: 

It is advisable to read the instructions carefully before you start installation.

Failure to comply with these instructions, improper use or incorrect connection may compromise the safety or correct operation of the device and hence of the entire system.

No liability shall be accepted for any malfunctions and/or damage due to failure to comply with the instructions.

The company reserves the right to make improvements to the products.

⚠ THIS BOOKLET IS TO BE USED ONLY BY THE INSTALLER

Installation must be carried out only by professionally qualified personnel in compliance with current legal requirements.

 ELECTRICAL CONNECTIONS

With existing installations, a general check of the state of the wires (section, insulation, contacts) and auxiliary equipment (photocells, receivers, pushbutton boards, key selectors, etc.) is recommended.

Tips for correct installation:

1. The cross section of the cables should be calculated according to their length and absorbed current.
2. Do not use a single cable of the “multi-core” uncommon with other equipment.
3. When the control cables are very long (over 50 metres), de-coupling is advisable with relays mounted near the control unit.
4. Any N.C. inputs (photocells, limit switches, safety edge and stops) that are not used in the control unit should be short-circuited with the common terminal.
5. All the N.C. contacts linked with the same input should be connected in series.
6. All the N.O. contacts linked with the same input should be connected in parallel.

- THE INSERTION OF AN external, independent DISCONNECTING SWITCH (not supplied) 30mA of suitable capacity for the load is envisaged for the control unit power supply.

- The equipment should be INSTALLED in a “WORKMANLIKE” manner by qualified personnel in accordance with the laws in force and in compliance with standards EN 13241-1, EN 12453 and EN 12445 regarding automation safety.



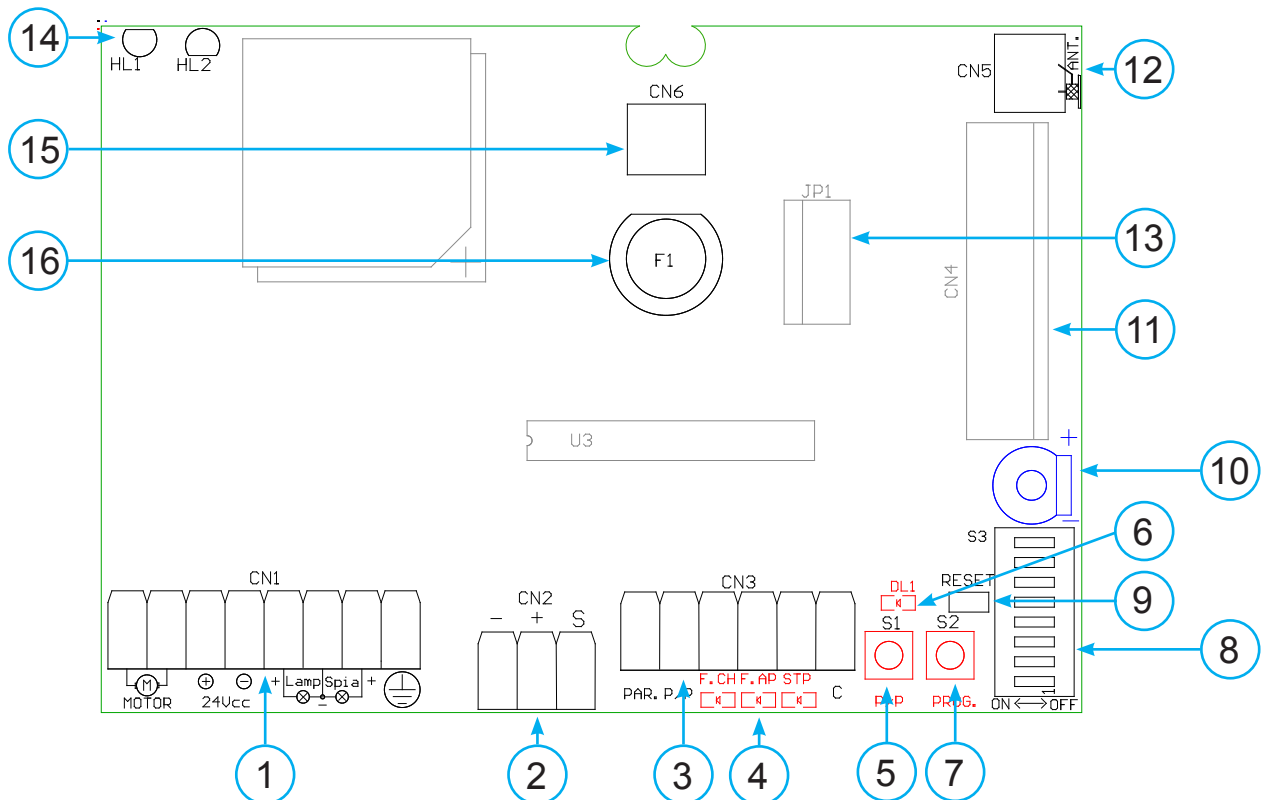
IMPORTANT: THE UNLOCK/LOCK PROCEDURES MUST BE PERFORMED WITH POWERED OFF MOTOR

MODELS AND CHARACTERISTICS

900CT-24M The control unit is equipped with: a system to prevent deformation - encoder sensitivity regulation - motor deceleration - motor brake - magnetic limit switch sensors - phototest (can be bypassed)

TECHNICAL DATA	CT-24M
POWER SUPPLY	230Vac/50Hz - 24Vac 80VA
MAX. MOTOR LOAD	120W
ACCESSORIES POWER SUPPLY OUTPUT	24Vac 400mA
BATTERY TYPE (NOT SUPPLIED)	Rechargeable 2 x 12V 1,3Ah
BATTERY AUTONOMY	4 cycles within 5h
OPERATING TEMPERATURE	-20°C/+60°C

OVERALL VIEW



DESCRIPTION

- ① CN1 Terminal board for 24V connections. (Motor – Blinkers – On light)
- ② CN2 Encoder connector
- ③ CN3 Terminal board for output connections (Controls and Safety Devices)
- ④ Led Inlet safety light: Light on = inlet closed
- ⑤ S1 P/P (Pass/Pass) Button
- ⑥ DL1 Programming light
- ⑦ S2 PROG button for programming
- ⑧ S3 Dip-switch setting functions
- ⑨ Control Unit Reset. Short circuiting the 2 pins for a moment is the same as rebooting the power supply
- ⑩ T1 Trimmer to regulate encoder sensitivity to deformation
- ⑪ CN4 Connector for snap-in receiver radio circuit board (optional)
- ⑫ CN5 Antenna connector
- ⑬ JP1 Battery charger module
- ⑭ HL1 HL2 Magnetic limit switch sensors
- ⑮ CN6 power supply
- ⑯ F1 line protection 230Vac 10A delayed

CN1

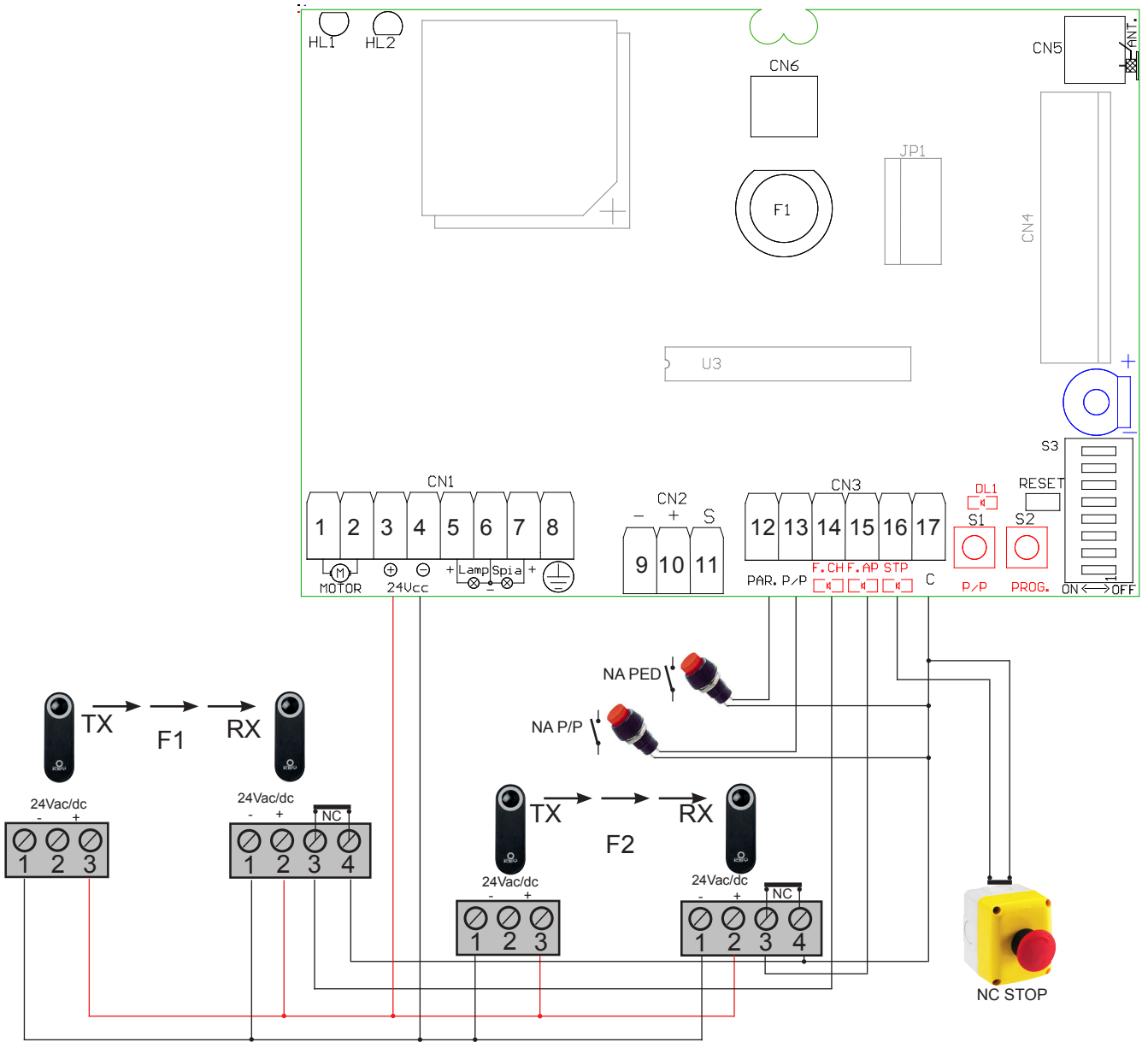
- 1) 24V motor
- 2) 24V motor
- 3) 24V Powers auxiliary devices
- 4) 24V Powers auxiliary devices
- 5) Blink. Power supply
- 6) common
- 7) Warning light / PhotoTest
- 8) ground

CN2

- 9) - Motor Encoder (white)
- 10) + Motor Encoder (brown)
- 11) S Motor Encoder (green)

CN3

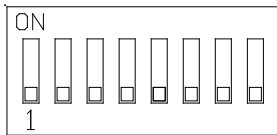
- 12) PED Pedestrian Opening
- 13) P/P Pass Pass Opening
- 14) F.CH Photo Safety Closed
- 15) F.AP Photo Safety Open
- 16) STP STOP Safety device
- 17) C common



CN4 Snap-in receiver

CN5 Receiver Antenna

CN6 Secondary Transformer Power Supply



DIP No.	FUNCTION	OFF	ON
1	Speed during slowdown	High speed	Low speed
2	Automatic Closing	OFF	ON
3	P/P Control Function	An Open pulse A Close pulse	An Open pulse / A Stop pulse / A Close pulse
4	Shared	Accept P/P pulse	Upon opening rejects inversion or stop command through the P/P inlet – In closing accepts inversion or Stop command
5	Percentage Slowdown	10% of the total run saved	30% of the total run saved
6	Percentage Pedestrian opening	20% partial opening	40% partial opening
7	Blinker / Courtesy light	Bistable opening for Blinker connection	Monostable output timed at 90 sec from last operation
8	Phototest	Phototest NOT enabled	Phototest ENABLED when Photo is on in FCH closing

PROGRAMMING WORK AND SELF-LEARNING PAUSES

1. Bring the automation gate to approximately half its stroke.
 2. Press the PROG button and keep it pressed for 3 seconds. The blinker or LED L1 will go on and remain on steady warning that you have entered the programming procedure.
 3. Press the P/P button to close the Gate all the way to the end of its stroke. After 2 second it will invert direction to opening and the gate will be opened all the way (the entire learning procedure is performed in slow motion). In case limit switches are not detected by the control unit, we advise users to turn both magnets by 180° on the horizontal metal brackets on which magnets are fixed.
 4. The first maneuver performed by the control unit is closing. This makes it possible for the unit to determine whether the motor is turning in the proper direction. If not, and the unit does not close. In this case run a RESET by touching the two Pins marked RESET with the tip of a screwdriver. The control unit will immediately block the operation, thus enabling you to invert polarity of the motor cables. Then repeat programming starting from point 2.
 5. The gate opens all the way to the limit switch.
 6. Start the timing count for automatic closing and let the desired time elapse.
 7. Press the P/P button once more or press the remote control button.
 8. The gate starts the closing maneuver and continues until it has reached the fully closed limit switch.
 9. The control unit automatically exits the programming procedure and Led LD1 goes off.
- You can pre-calibrate or check the magnetic limit switches during programming. PROCEDURE:
- Release the gate by triggering the motor, the gate will move freely.
 - Enter programming mode by pressing the PROG button and keeping it pressed for 5 seconds.
 - Manually move the gate. When it nears the limit switch the blinker and led DL1 will flash.
 - Make the necessary adjustments.
 - Lock the motor once more and proceed with point 3 of the self-learning procedure.

To ensure that the gate stops precisely when the limit switch is detected, we suggest activating maximum slowdown (Dip 5 = ON) and minimum slowdown (Dip 1 = ON).

PEDESTRIAN OPENING PROGRAMMING

With default programming the Pedestrian command automatically runs a partial opening of 20% of the total stroke acquired with Dip 6 = OFF.

To increase this opening percentage to 40% of total opening, set Dip 6= On.

FOTO-TEST

By default the control unit is installed with this function disabled (Dip 8 = OFF) To run the phototest, arrange two feed lines connected as follows:

- The photocell receiver (with 5-pin terminal board) is powered by the 24 Vdc terminals.
- The photocell transmitter (with 2-pin terminal board) is powered between the – COM and the + LIGHT outlet
- This test is performed ONLY on the photocell active in F.CH closing

Each time the gate is opened, the control unit briefly cuts off the power supply to the photocell transmitters and checks for the status change. If everything functions properly it begins the opening maneuver; if an anomaly is found, the cycle stops and the blinker flashes several times in warning.

The phototest provides the following advantages:

- Energy savings;
- Increased autonomy in BATTERY mode;
- Less wear on the electronic device components.
- The phototest only functions when the photocell is on in F.CH closing mode.
- When the phototest is enabled and the gate is closed, the photocell transmitters are off and the corresponding light is OFF.
- The photocells only function while the gate is moving.
- During the Programming procedure, leave this function off (Dip 8 = OFF) and short-circuit the input by placing a jumper between C and F.CH.

ADJUSTMENT OF SENSITIVITY

EN 12445 requires that every automation system must pass impact tests measured with a special instrument. Carry out the impact tests and change the encoder sensitivity through the trimmer SENS (part 10 fig. 1).

If adjustments are insufficient to make values fall within the graph indicated by the above standard, we recommend installing a soft rubber profile on the leading edge of the gate in order to soften impact.

If the requirements of the standard can still not be met after having adjusted the sensitivity and mounted the rubber profile, alternative devices must be mounted, such as a safety edge on the leading edge of the gate.

ELECTRONIC CLUTCH FUNCTION

This is an extremely important safety device. Calibration remains constant in time and is not subject to wear as are mechanical clutches.

- A. It is activated both during closing and during opening. When it cuts in, it inverts the direction without disabling automatic closing if this has been enabled.
- B. If it intervenes twice in a row, it automatically reverts to STOP mode, disabling automatic closing if this was enabled. Intervening twice in a row means that the obstacle is permanent and any further movement could be dangerous, forcing the user to give the close or open command.
- C. If it intervenes three times in a row and for more than 120 seconds, the control unit runs an Emergency procedure which slowly opens the gate all the way until it is flush with the end stroke and then closes it again automatically if automatic closing mode has been enabled. In this way, if the end strokes have been lost, they would be automatically resynchronized.

BLINKER FUNCTION

BRAIN LAMP Function: Besides being a safety device, the blinker gives both the end user and the installer information on the gate operating status. Let's take a look at its function:

- A. Pre-blinking is 0.5 second in opening mode and 1 second inclosing mode. For safety purposes this warns the user that the gate will start moving shortly.
- B. When gate automatic opening and closing are enabled (Dip 2 set to ON), the blinker remains on steady for 2 seconds indicating that the gate will be closed automatically.
- C. When the gate is open, if a safety device cuts in, it flashes for 5 seconds and then goes off until the contact of the safety device is reset.
- D. It indicates the Programming phases described in the paragraph on Programming work times.

FINAL TEST AND INSPECTION

Always carry out a final test and inspection after having completed all the programming.

- Check correct operation of the protective devices (anti-crushing system, stop pushbutton, photocells, safety edges, etc.).
- Check correct operation of the warning devices (flashing lights, open gate warning light, etc.).
- Check correct operation of the control devices (P/P button, remote controls, etc.).

RADIO (opzionale) La RADIO va innestata sul connettore JP1.

La centrale CT-24M è compatibile con i seguenti ricevitori Key Automation della serie MEMO ad innesto: 900RXI-22 / 900RXI-42 / 900RXI-42R

BATTERY CHARGER CABAT-30 (optional)

A system with CT-24M can even function in a power blackout, just install two batteries (12V. 1.3Ah. MAX – not supplied) and a CABAT-30 battery charger. This does not modify the system in any way.

In new systems, after installation and testing, insert the snap-in battery charger module into the connector but be very careful to insert the right polarity of the two faston connection cables.

Connection sequence:

- Unplug the 230Vac power supply.
- Snap in the CABAT-30 module.
- Connect the two batteries in series using the cables provided and paying close attention to the polarity.
- Check that the safety lights go on.
- Plug in the network once more.
- The new batteries will be fully charged after approx. 10 hours.
- The number of gate movements possible when powered by battery depends on many factors; an approximate example could be 4 complete cycles under the following conditions:
 - gate 150kg length 3m
 - installation with 1 pair of photocells, plug-in receiver and 1 flashing light (20W max.)
 - fully charged batteries
 - within 5h from 230Vac power failure

FINAL RECOMMENDATIONS

1. Only qualified personnel having the legal requirements must install the automation according to the principles of good workmanship and in conformity with the machinery directive 98/37/CE and standards EN 12453 and EN 12445.
2. Check that the existing structures (posts, hinges, leaves) are stable in relation to the forces developed by the motor.
3. Check that suitably robust limit stops have been installed for end of gate opening and closing.
4. Analyse the hazards connected with the automation system and adopt the necessary safety and signalling devices accordingly.
5. Install the commands (e.g. the key selector) so that the user is not placed in a hazardous area when using them.
6. Upon completion of the installation, test the safety, signalling and release devices of the automation system several times.
7. Apply the CE label or plate with information regarding the hazards and identification data on the automation.
8. Give the end user the instructions for use, the safety recommendations and the CE declaration of conformity.
9. Ensure that the user has understood the correct automatic, manual and emergency operation of the automation system.
10. Inform the user in writing (e.g. in the instructions for use) of any unprotected residual risks and of foreseeable misuse.
11. Prepare a maintenance schedule for the automation installation (at least once every 6 months for the safety devices), recording the work carried out in a special book.

Note! For trouble-free operation and long life of the gearmotor, periodically grease the lever sliding points.



DISPOSAL

This product is composed of various components which may in turn contain pollutants. Do not dispose of it in the environment! Find out about the method for recycling or disposing of the product in compliance with current local laws.