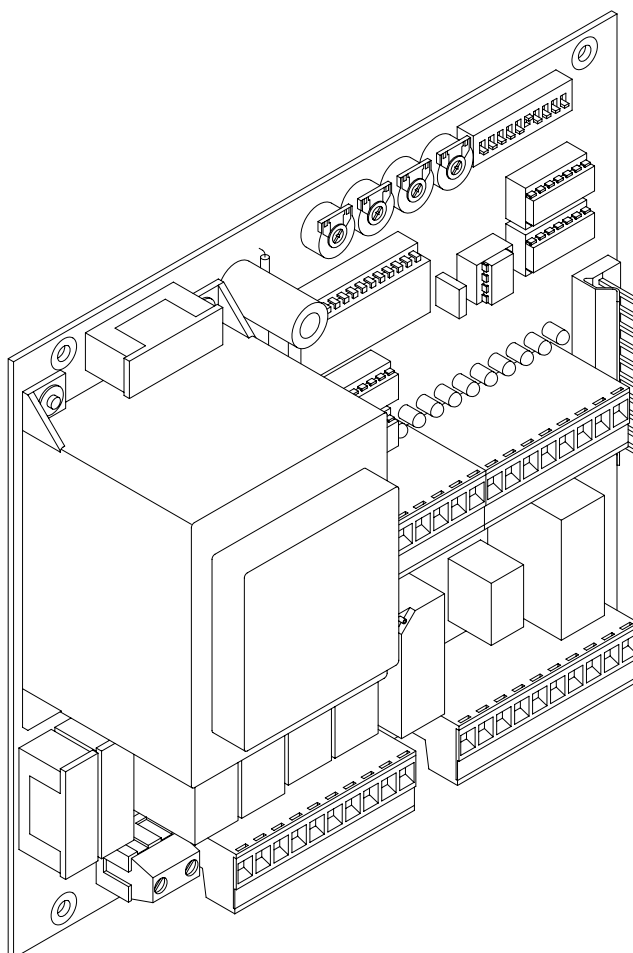


- I** CENTRALINA DI COMANDO
- GB** CONTROL UNIT
- F** UNITÉ DE COMMANDE
- E** CENTRAL DE MANDO



RIGEL-4 UL

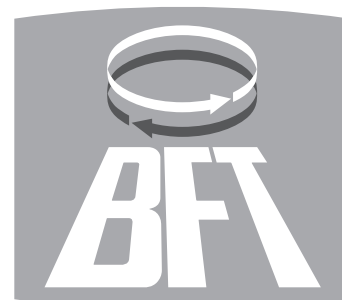


ISTRUZIONI D'USO E DI INSTALLAZIONE
INSTALLATION AND USER'S MANUAL
INSTRUCTIONS D'UTILISATION ET D'INSTALLATION
INSTRUCCIONES DE USO Y DE INSTALACION



**COMPANY WITH INTEGRATED
 MANAGEMENT SYSTEM CERTIFIED BY DNV
 = ISO 9001:2000 =
 ISO 14001:2004**

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Thank you for buying this product, our company is sure that you will be more than satisfied with the product's performance. The product is supplied with a "WARNINGS" leaflet and an "INSTRUCTION MANUAL".

These should both be read carefully as they provide important information about safety, installation, operation and maintenance.

This product complies with the recognised technical standards and safety regulations. We declare that this product is in conformity with the following Directives: CAN/CSA-C22.2 No. 247-92 UL Std. No. 325



IMPORTANT NOTE

For wiring and installation operations, refer to the current standards and follow the main technical principles ensuring good performance.

GENERAL SAFETY

WARNING! An incorrect installation or improper use of the product can cause damage to persons, animals or things.

- The "Warnings" leaflet and "Instruction booklet" supplied with this product should be read carefully as they provide important information about safety, installation, use and maintenance.
- Scrap packing materials (plastic, cardboard, polystyrene etc) according to the provisions set out by current standards. Keep nylon or polystyrene bags out of children's reach.
- Keep the instructions together with the technical brochure for future reference.
- This product was exclusively designed and manufactured for the use specified in the present documentation. Any other use not specified in this documentation could damage the product and be dangerous.
- The Company declines all responsibility for any consequences resulting from improper use of the product, or use which is different from that expected and specified in the present documentation.
- Do not install the product in explosive atmosphere.
- The Company declines all responsibility for any consequences resulting from failure to observe Good Technical Practice when constructing closing structures (door, gates etc.), as well as from any deformation which might occur during use.
- Disconnect the electrical power supply before carrying out any work on the installation. Also disconnect any buffer batteries, if fitted.
- Fit an omnipolar or magnetothermal switch on the mains power supply, having a contact opening distance equal to or greater than 3mm.
- Check that a differential switch with a 0.03A threshold is fitted just before the power supply mains.
- Check that earthing is carried out correctly: connect all metal parts for closure (doors, gates etc.) and all system components provided with an earth terminal.
- The Company declines all responsibility with respect to the automation safety and correct operation when other manufacturers' components are used.
- Only use original parts for any maintenance or repair operation.
- Do not modify the automation components, unless explicitly authorised by the company.
- Instruct the product user about the control systems provided and the manual opening operation in case of emergency.
- Do not allow persons or children to remain in the automation operation area.
- Keep radio control or other control devices out of children's reach, in order to avoid unintentional automation activation.
- The user must avoid any attempt to carry out work or repair on the automation system, and always request the assistance of qualified personnel.
- Anything which is not expressly provided for in the present instructions, is not allowed.

INSTALL THE GATE OPERATOR ONLY WHEN:

- The operator is appropriate for the construction of the gate and the usage Class of the gate,
- All exposed pinch points are eliminated or guarded,
- The operator is intended for installation only on gates used for vehicles. Pedestrians must be supplied with a separate access opening,
- The gate must be installed in a location so that enough clearance is supplied between the gate and adjacent structures when opening and closing to reduce the risk of entrapment. Swinging gates shall not open into public access areas,
- The gate must be properly installed and work freely in both directions prior

to the installation of the gate operator. Do not over-tighten the operator clutch or pressure relief valve to compensate for a damaged gate.

FOR GATE OPENERS WITH HOLD-TO-RUN CONTROL:

- The gate operator controls must be placed so that the user has full view of the gate area when the gate is moving,
- A sign with the message "WARNING" must be positioned near the controls. The characters for the writing should be at least 6.4 mm high. The following statement should also be indicated: "Moving Gate Has the Potential of Inflicting Injury or Death - Do Not Start Gate Unless Path is Clear".
- An automatic closing device (such as a timer, loop sensor, or similar device) shall not be employed
- No other activation device shall be connected.

Controls must be far enough from the gate so that the user is prevented from coming in contact with the gate while operating the controls. Controls intended to be used to reset an operator after 2 sequential activations of the entrapment protection device or devices must be located in the line-of-sight of the gate. Outdoor or easily accessible controls shall have a security feature to prevent unauthorized use.

All warnings signs and placards must be installed where visible in the area of the gate.

FOR GATE OPENERS PROVIDED WITH SENSOR FOR CONTACT-FREE DETECTION:

- See instructions on the placement of non contact sensor for each type of application,
- Care shall be exercised to reduce the risk of nuisance tripping, such as when a vehicle, trips the sensor while the gate is still moving, and
- One or more non-contact sensor shall be located where the risk of entrapment or obstruction exist, such as the perimeter reachable by a moving gate.

FOR GATE OPENERS PROVIDED WITH CONTACT DETECTION (RUBBER EDGE OR SIMILAR):

- One or more contact sensor shall be located at the pinch point of a vehicular vertical pivot gate.
- A hardwired contact sensor shall be located and its wiring arranged so that the communication between the sensor and the gate operator is not subjected to mechanical damage.
- A wireless contact sensor such as one that transmits radio frequency (RF) signals the gate operator for entrapment protection functions shall be located where the transmission of the signals are not obstructed or impeded by building structure, natural landscaping or similar obstruction. A wireless contact sensor shall function under the intended end-use conditions.



IMPORTANT SAFETY INSTRUCTIONS

WARNINGS: to reduce the risk of injury or death:

- **Read and follow all instructions.**
- Never let children operate or play with gate control. Keep the remote control away from children.
- Always keep people and objects away from the gate. **NO ONE SHOULD CROSS THE PATH OF THE MOVING GATE.**
- Test the gate operator monthly. The gate MUST reverse on contact with a rigid object activates the non-contact sensor. After adjusting the force or the limit of travel, reset the gate operator. Failure to adjust and reset the gate operator properly can increase the risk of injury or death.
- Use the emergency release only when the gate is not moving.
- **KEEP GATES PROPERLY MAINTAINED.** Read the owners manual. Have a qualified service person make repairs to gate hardware.
- The entrance is for vehicles only. Pedestrians must use separate entrance.
- Save these instructions.

1) General outline

This control unit with microprocessor has been designed to control one or two motors with a power up to 375 W.

The control unit is equipped with Dip-switches and trimmers which allow the configuration and calibration of the unit respectively.

The functions of the Dip-switches and trimmers as well as the effects generated by the alteration to the initial setting are described in the following paragraphs while their arrangement on the board is shown in the diagram of figure 1.

To facilitate maintenance and replacement operations, the board features a removable terminal board with 40 terminals. The wiring diagram of the board is shown in figure 2.

To facilitate installation operations, the board is supplied with a series of pre-wired jumpers.

The jumpers refer to the following terminals: 31-33, 32-33, 33-34, 35-36, 36-37, 38-39, 39-40, 26-24.

On request, the **SSR4** board controlling two traffic lights can be fitted to the board; the operation and specifications of the traffic light board are contained in the relevant specific section while the wiring diagram and a possible arrangement is shown in figure 3.

Rigel 4 can be completed with an additional **SPL** board (figure 4) and an automatic thermostat for motor pre-heating. For wiring diagram, see fig. 5. The limit switch inputs for closing and opening manoeuvres are separate for each motor.

If the sensing edge is activated, the special separate connection reverses the movement direction for a period of 3 seconds (a subsequent command continues the movement in the reverse direction).

A 12V~ electric lock can also be connected; the power excitation lasts about 3 seconds.

The continuous duty **EBP** electric lock can be connected in parallel to the blinker (120V~).

A courtesy light output has been provided with a time range up to 90 seconds from the last command given.

2) Technical specifications

Mains power supply	120V~ ±10% 60Hz (different voltages available on request)
Mains insulation/low voltage	> 2MΩ 500Vdc
Dielectric strength/low voltage	3750V~ per 1 minute
Motor output current	5A max
Motor relay switching current	15A
Max. motor power	1 motor 375W, 2 motors 375W + 375W
Courtesy light	Max 150W time set up to 90 seconds from last command
Power supply for accessories	24V~ (0.5A maximum absorption)
Electric lock output	12V~ (2A maximum absorption)
Gate-open warning light	24V~ 3W max
Blinker	120V~ 40W max
Fuses	see figure 1

3) Terminal board connection

CAUTION: Keep the low voltage connections completely separated from the power supply connections.

- JP1**
1-2 Power supply 120V~ ±10% 60Hz (1 phase, 2 neutral).
For connection to the mains use a multiple-pole cable with a minimum cross section of 3x1.5mm² (16AWG) of the type indicated in the above-mentioned standard (UL1015).
- JP6**
3-4-5 Connection motor 1 (may be delayed in opening); terminal 4-5 phase and capacitor, terminal 3 neutral.
6-7-8 Connection motor 2 (may be delayed in closing); terminal 7-8 phase and capacitor, terminal 6 neutral.
9-10 Output for 120V~ flashing beacon (40W max) and for electronic lock EBP 120V~.
11-12 Courtesy light 120V~(150W max) delayed for 90s after the last operation.
- JP4**
13-14 Gate open warning light 24V (3W max).
15-16 24V~output for photocells etc. (6W max, 25mA).
17-18 Output for 12V~ lock (2A max).
19-20 Antenna input (19 signal, 20 braiding).
21-22 Output of second radio channel (if 2nd channel receiver installed).
- JP5**
23-24 Start command (n.o.), START I for traffic light.
24-25 Start command (n.o.), START E for traffic light.
26-27 **Shadow input (n.c.) If not used, leave the jumper connected.**
28-30 Open command (n.o.)
29-30 Close command (n.o.)
31-33 Stop command (n.c.)
32-33 Photocell input / safety circuit (n.c.)
33-34 Second safety circuit. Safety edge.
35-36 Open limit switch motor 1 (n.c.)
36-37 Close limit switch motor 1 (n.c.)
38-39 Open limit switch motor 2 (n.c.)
39-40 Close limit switch motor 2 (n.c.)

4) Functioning logic

The configuration of the control unit Rigel 4 with microprocessor is obtained by means of the Dip-switches.

Dip-switch 1 Photocells (FCH)

ON - Inhibits the operation of the photocell during the opening movement and immediately reverses the movement direction in the closing phase as soon as an obstacle is detected by the photocell.

OFF - When the photocell detects an obstacle and the gate is closing, the movement of the gate is immediately stopped; as soon as the obstacle has been removed, the gate opens. If an obstacle is detected by the photocell when the gate is opening, it stops immediately; as soon as the obstacle has been removed, the gate completes the opening stroke.

Dip-switch 2 Impulse blocking device (IBL)

ON - The start impulse has no effect on opening.
OFF - The start impulse on opening causes the stop of the gate (Dip 6 OFF) or the reverse (Dip 6 ON).

Dip-switch 3 Automatic closing (TCA)

ON - Carries out the automatic closing of the gate after a dwell time set on the TCA trimmer. The automatic closing is activated when: the gate reaches the opening end of stroke position, the working time on opening has elapsed, the gate is stopped during the opening phase by a start impulse.
OFF - Inhibits the automatic closing.

Dip-switch 4 Ram blow (HAMMER)

ON - Before opening the gate, it pushes for about 2 seconds on closing. This permits an easier release of the electric lock.
OFF - Inhibits the ram blow.

Dip-switch 5 Motor 1 opening delay (DELAY OPEN)

ON - Motor 1 starts with a delay of about 3 seconds on opening.
OFF - Motor 1 starts with a delay of about 0.5 seconds on opening.

Dip-switch 6 2 or 4-step logic (2P/4P)

ON - When a start impulse is given while the gate is moving, the movement direction will be inverted (2 step logic).

OFF - When a start impulse is given while the gate is moving, the gate will stop; a subsequent impulse will cause the inversion of the movement direction (4 step logic). Note: the start impulse has no effect when the Dip 2 is OFF during the opening phase.

Dip-switch 7 Shadow loop management:

ON - Shadow contact active when gate both open and closed.

OFF - Shadow contact active when gate open only.

Operation:

Gate state	Shadow contact 26-27	Operation
Gate not moving	closed	Gate movement enabled
Gate not moving	Open	Gate movement disabled
Gate moving	closed	Cycle completion (Shadow contact state irrelevant)
Gate moving	Open	Cycle completion (Shadow contact state irrelevant)

Dip-switch 8 Block persistence (BLOCK)

ON - If the motors remain still in the complete opening or closing position for more than one hour, they are pushed for about 3 seconds in the end of stroke direction. This function is performed every hour.

OFF - Inhibits the block persistence function.
Note: In the case of oil-hydraulic motors, this function is used to compensate for any possible oil volume decrease due to a temperature decrease during long pauses (for example during the night) and to keep the grease slightly heated in all the electromechanical actuators for swing gates.

WARNING: Do not use this function for sliding gates or without appropriate mechanical blocks.

Dip-switch 9 Reduced or standard working time range (S.TW)

ON - Working time TW between 1, 40 seconds (TW.PED from 1 to 20 seconds).

OFF - Working time TW between 30, 180 seconds (TW.PED from 15 to 90 seconds).

Dip-switch 10 Gate-open/close control (U.P.)

Operates on the signals connected to the terminals 28-29.

ON - Hold-to-run operation: the manoeuvre lasts for as long as the control key is pressed.

OFF - Separate gate-open/close automatic control: one impulse opens the gate if closed and vice versa.

5) Functions controlled by the trimmers

AUX Not used.

- TW** Adjusts the working time both during opening and closing.
TCA Adjusts the dwell time after which the gate re-closes automatically.
T.DELAY Adjusts the delay time on closing of motor 2.

6) LED functions

The Rigel 4 control unit is equipped with a series of LEDs which detect any system malfunctions.

- LINE** (DL1) Stays on in the presence of the mains supply and when the fuse F2 is in perfect working order.
START I (DL2) Lights up when an internal start command is given.
START E (DL3) Lights up when an external start command is given or when the first channel of the receiver is activated.
SHD (DL4) Switches off when shadow loop is engaged.
OPEN (DL5) Lights up when a manual opening control is given.
CLOSE (DL6) Lights up when a manual closing control is given.
STOP (DL7) Switches off when a block command is given.
PHOT (DL8) Switches off when the photocells are not aligned that is when obstacles are detected.
BAR (DL9) Switches off when the sensitive edge is activated.
SWO1 (DL10) Switches off when the gate (motor 1) reaches its complete opening position provided that it is equipped with a limit switch.
SWC1 (DL11) Switches off when the gate (motor 1) reaches its complete closing position provided that it is equipped with a limit switch.
SWO2 (DL12) Switches off when the gate (motor 2) reaches its complete opening position provided that it is equipped with a limit switch.
SWC2 (DL13) Switches off when the gate (motor 2) reaches its complete closing position provided that it is equipped with a limit switch.
(DL14) Direction indicator LED: lights up when the gate is closing.
M1 (DL15) Lights up when motor 1 is activated (on opening or closing).
M2 (DL16) Lights up when motor 2 is activated (on opening or closing).

After having connected the control unit to the mains with the jumpers prewired between the terminals, see figure 2, make sure that it works perfectly by checking if the following LEDs light up: **LINE**, **STOP**, **PED**, **PHOT**, **BAR**, **SWO1**, **SWC1**, **SWO2**, **SWC2**.

This fast check is recommended before installation in order to discover any malfunctions of the control unit.

7) SSR4 traffic light board (Option not managed)

8) Maintenance and demolition

The maintenance of the system should only be carried out by qualified personnel regularly. The materials making up the set and its packing must be disposed of according to the regulations in force.

Batteries must be properly disposed of.

WARNINGS

Correct controller operation is only ensured when the data contained in the present manual are observed. The Company is not to be held responsible for any damage resulting from failure to observe the installation standards and the instructions contained in the present manual.

The descriptions and illustrations contained in the present manual are not binding. The Company reserves the right to make any alterations deemed appropriate for the technical, manufacturing and commercial improvement of the product, while leaving the essential product features unchanged, at any time and without undertaking to update the present publication.

Fig. 1

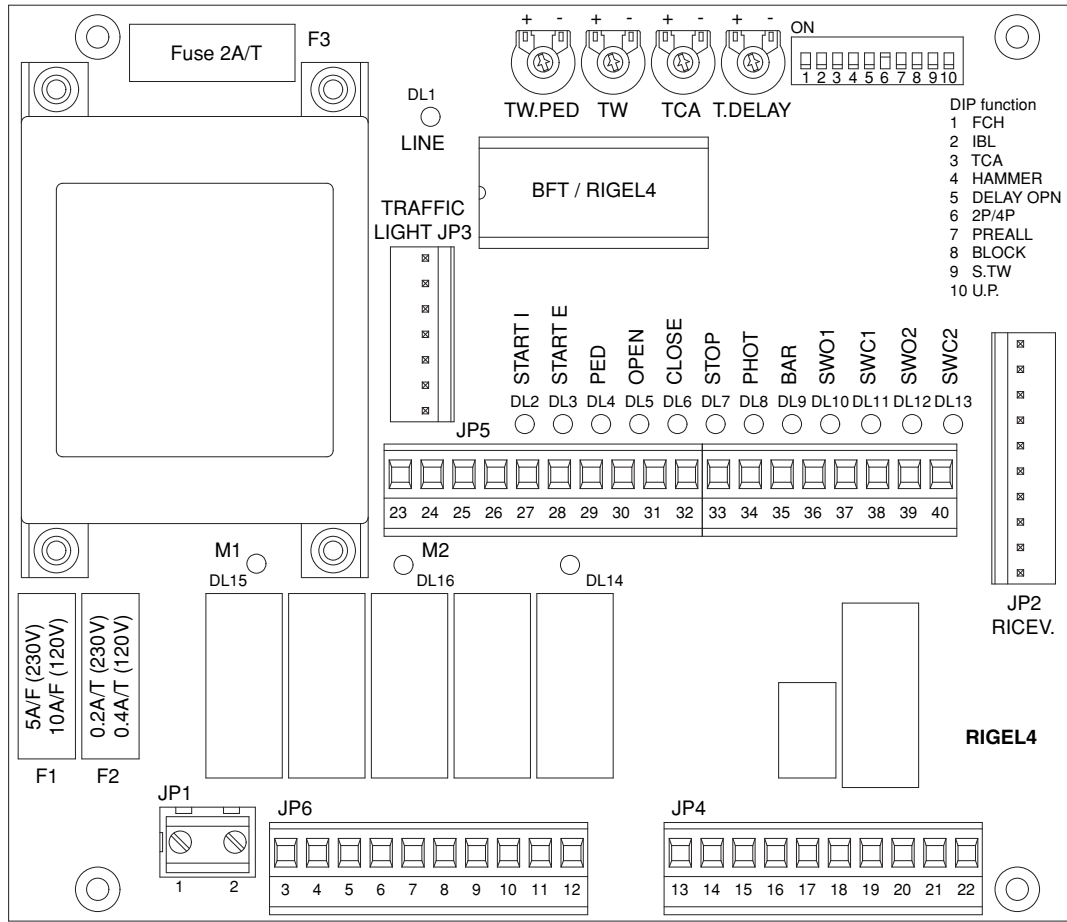


Fig. 2

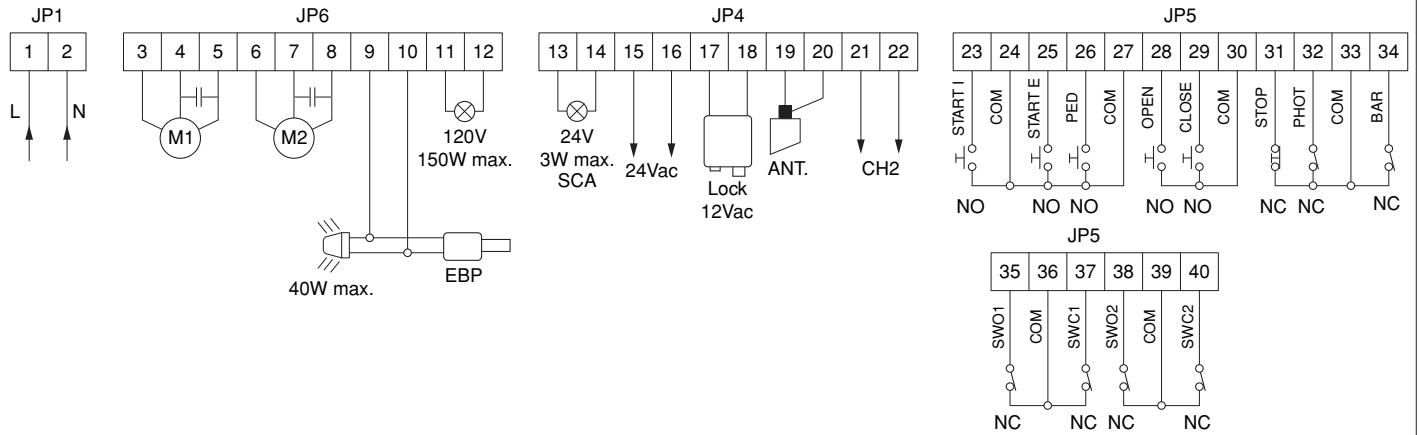


Fig. 3

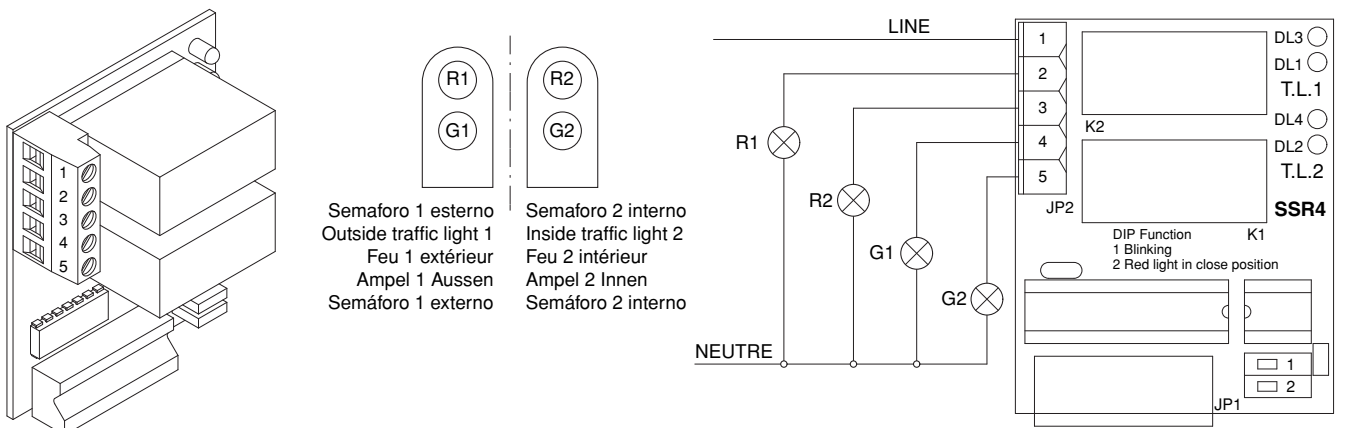


Fig. 4

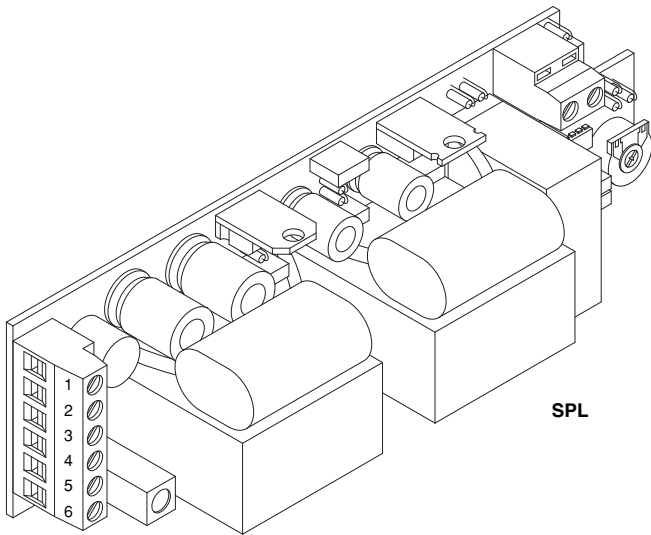


Fig. 5

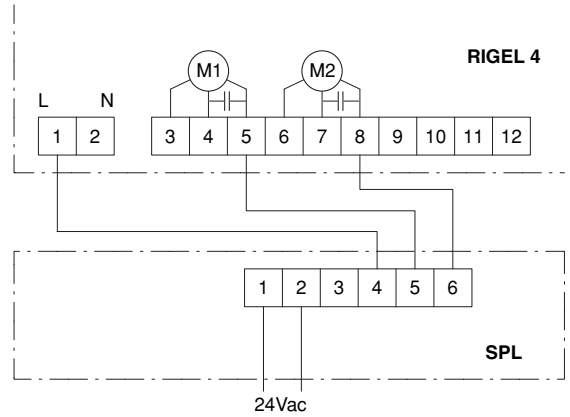
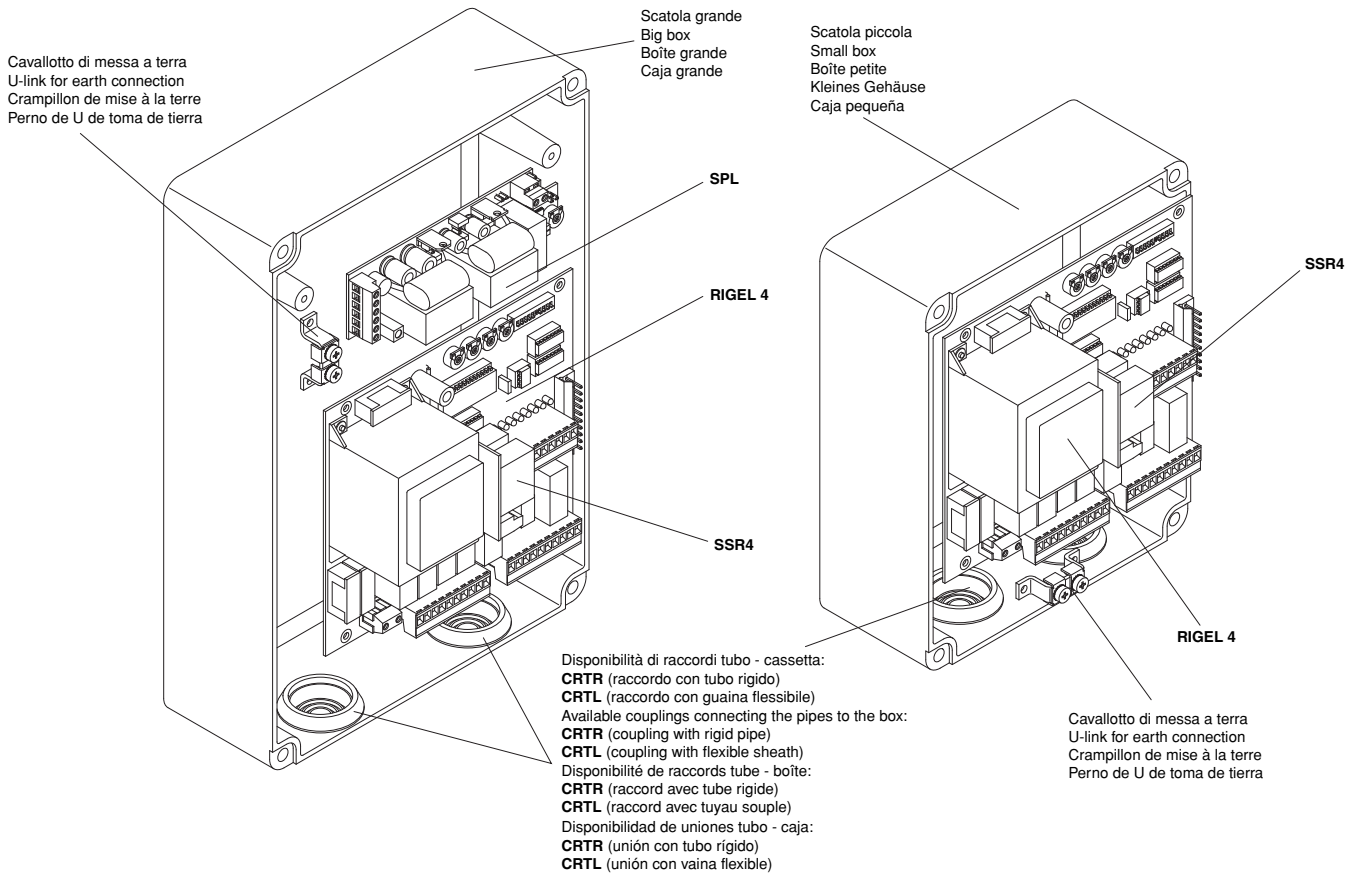


Fig. 6



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