

# RIGEL 4

D811208 02-09-98 Vers. 02

## CONTROL UNIT



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 an "INSTRUCTION MANUAL" which provides 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 European Directives: 89/336/EEC and 73/23/EEC (amended by RL 91/263/EEC, 92/31/EEC and 93/68/EEC).

## IMPORTANT NOTE

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

### 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, 39-0.

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 12Vac 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 (230Vac).

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	230V±10% 50Hz (different voltages available on request)
Mains insulation/low voltage	> 2MΩ 500Vdc
Dielectric strength/low voltage	3750Vac 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	24Vac (0.5A maximum absorption)
Electric lock output	12Vac (2A maximum absorption)
Gate-open warning light	24Vac 3W max
Blinker	230V 40W max
Fuses	see figure 1

### 3) Terminal board connection

JP1	
1-2	Power supply 230Vac±10%, 50-60Hz (1 phase, 2 neutral).
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 230Vac flashing beacon (40W max) and for electronic lock EBP 230Vac.
11-12	Courtesy light 230Vac (150W max) delayed for 90s after the last operation.
JP4	
13-14	Gate open warning light 24V (3W max).
15-16	24Vac output for photocells etc. (6W max, 25mA).

17-18	Output for 12Vac 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	Pedestrian gate - start command
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 Pre-alarm (PREAL)

ON - The blinker lights up about 3 seconds prior to motor start.

OFF - The blinker lights up as soon as the motors start.

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

TW.PED	Adjusts the working time of the pedestrian access gate (motor 2) or the partial working time of a sliding gate with both pedestrian and vehicular access.
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.
PED (DL4)	Lights up when a start command for the pedestrian access is given.
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 pre-wired between the terminals, see figure 2, make sure that it works perfectly by checking if the following LEDs light up: LINE, STOP, 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 (on request)

This board is only supplied for the Rigel 4 control unit.

SSR4 permits to manage two traffic lights with two lights each, one usually red and one green, which operate according to the usual logic for automatic gates. In addition, some other options are available that can be set using the Dip-switches provided in the SSR4 board.

The gate as well as the traffic light can be controlled by means of two commands:

- internal START (given when the gate is closed) which not only opens the gate but also switches on the red light on the outside and the green one on the inside when the gate is open.
- external START (given when the gate is closed) which not only opens the gate but also switches on the red light on the inside and the green one on the outside when the gate is open.

During the opening and closing manoeuvres the two red lights are illuminated.



### IMPORTANT NOTE

Provide signals inviting to limit the speed and to proceed slowly.



For a correct command sequence of the traffic light system, observe the following procedures:

- Position the traffic light 2 inside with respect to the gate and the traffic light 1 outside the gate (see figure 3).
- Activate the functions BLI, 2-step logic and pre-alarm (Dip 2, Dip 6, Dip 7 all to ON) provided on Rigel 4.

- The only command to gain access from the outside must be the external START (already present on the first channel of the receiver).
- For installations with traffic lights not visible from each other it is recommended to use the special microprocessor of Rigel 4 in which the function of the Dip 2 of Rigel 4 becomes:  
ON- Impulse blocking device active on opening.  
OFF- Impulse blocking device active on opening and during the TCA phase (if TCA on).

Terminal board connections:

- 1) phase
- 2) red light of traffic light 1
- 3) red light of traffic light 2
- 4) green light of traffic light 1
- 5) green light of traffic light 2

Dip-switch 1 Inhibits the blinking function at movement start

ON - Inhibits the blinking function at movement start

OFF - Activate the blinking function at movement start (operation time 5 sec).

Dip-switch 2 Permanent red light with gate closed

ON - Activates the red lights, when the gate is closed

OFF - Switches off the lights when the gate is closed.

Signals provided by the board:

Red and green LEDs for traffic light 1 and traffic light 2.

Luminous signal for each traffic light:

Green light: access permitted - fixed red light: access not permitted - Flashing red light: gate movement start; access not permitted.

N.B.: The movement reverse on closing does not enable the green light; before giving the Start command it is necessary to wait until the gate is completely closed.

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Fig. 1

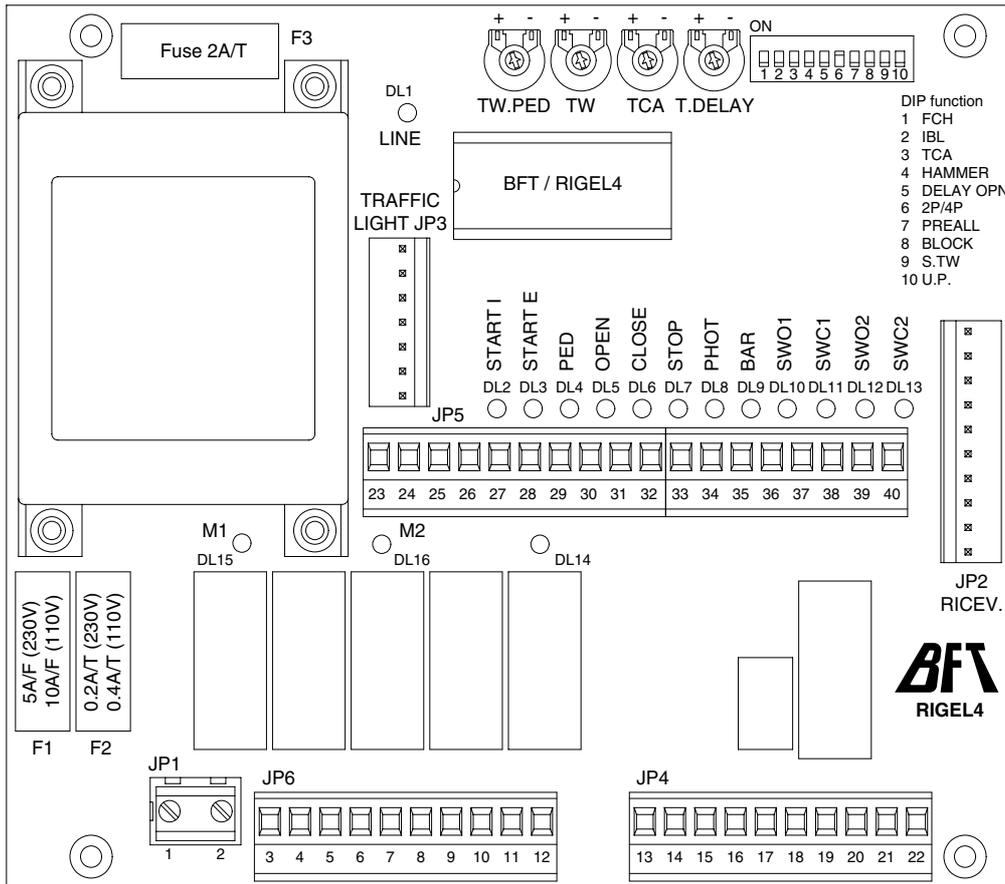


Fig. 2

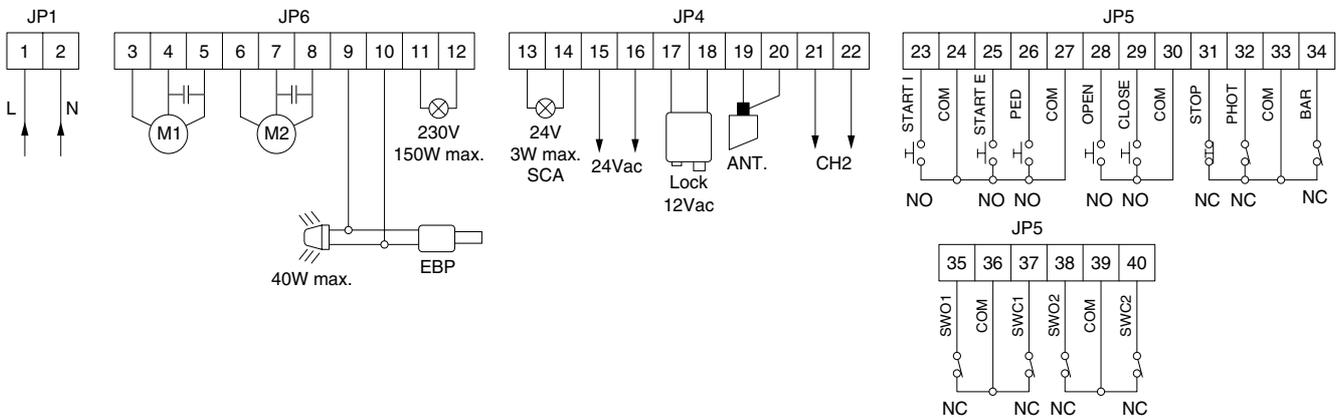
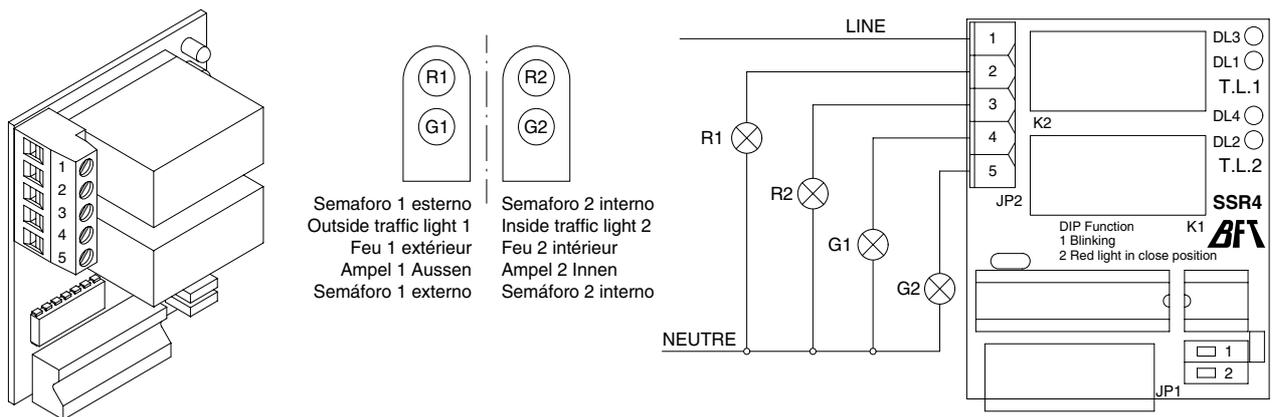
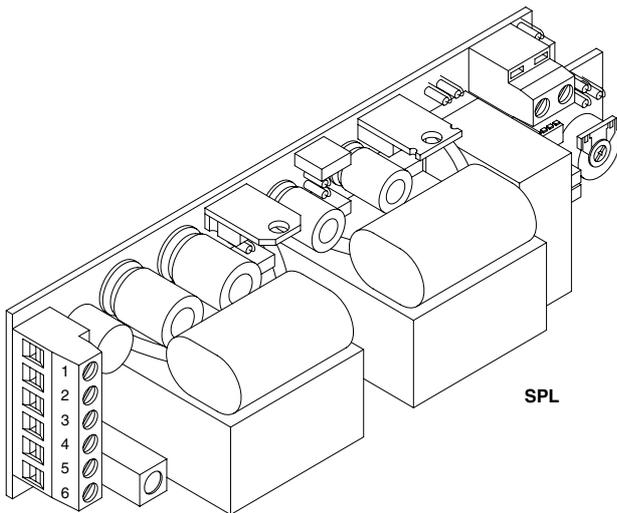


Fig. 3



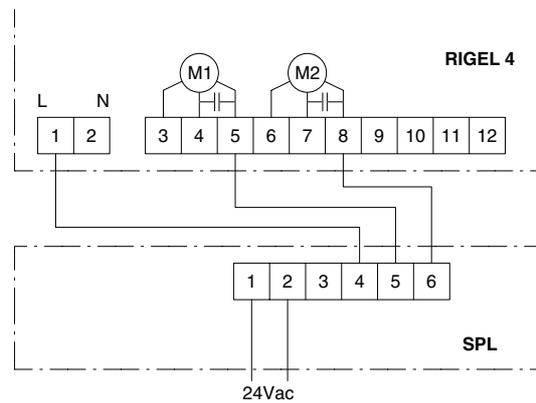
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Fig. 4



SPL

Fig. 5



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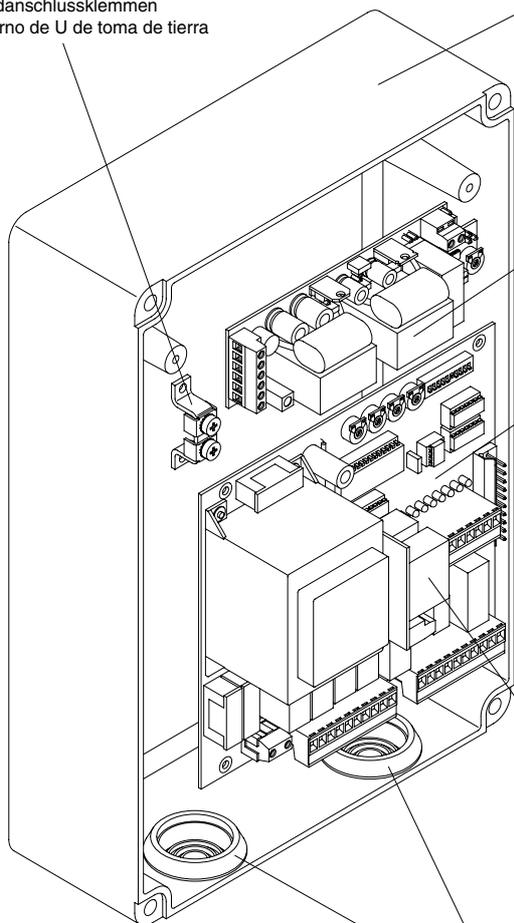
24Vac

Fig. 6

Cavallotto di messa a terra  
U-link for earth connection  
Crampillon de mise à la terre  
Erdanschlussklemmen  
Perno de U de toma de tierra

Scatola grande  
Big box  
Boîte grande  
Großes Gehäuse  
Caja grande

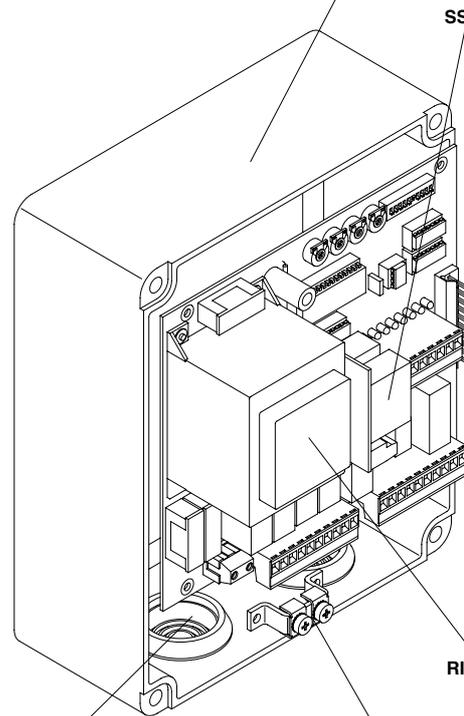
Scatola piccola  
Small box  
Boîte petite  
Kleines Gehäuse  
Caja pequeña



SPL

RIGEL 4

SSR4



SSR4

RIGEL 4

Disponibilità di raccordi tubo - cassetta:  
**CRTR** (raccordo con tubo rigido)  
**CRTL** (raccordo con guaina flessibile)  
 Available couplings connecting the pipes to the box:  
**CRTR** (coupling with rigid pipe)  
**CRTL** (coupling with flexible sheath)  
 Disponibilité de raccords tube - boîte:  
**CRTR** (raccord avec tube rigide)  
**CRTL** (raccord avec tuyau souple)  
 Erhältliche Rohrverschraubungen für Steuerungsgehäuse:  
**CRTR** (Verbindungsstück für starres Rohr)  
**CRTL** (Verbindungsstück für flexibles Rohr)  
 Disponibilidad de uniones tubo - caja:  
**CRTR** (unión con tubo rígido)  
**CRTL** (unión con vaina flexible)

Cavallotto di messa a terra  
U-link for earth connection  
Crampillon de mise à la terre  
Erdanschlussklemmen  
Perno de U de toma de tierra