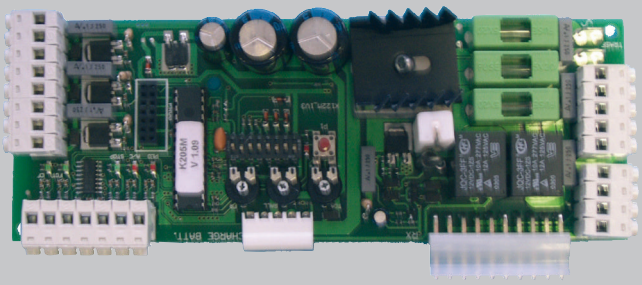
>MOVING LIFE

K205M

QUADRO DI COMANDO PER BARRIERE AUTOMATICHE
CONTROL PANEL FOR AUTOMATIC BARS
SCHALT- UND STEUERTAFEL FÜR DEN AUTOMATISCHEN SCHRANKEN
LOGIQUE DE COMMANDE POUR BARRIÈRES AUTOMATIQUES
PANEL DE MANDOS PARA BARRERAS AUTOMÁTICAS



>ITALIANO
>ENGLISH
>DEUTSCH
>FRANÇAIS
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GUIDA ALL'INSTALLAZIONE
INSTALLATION GUIDE
INSTALLATIONSANLEITUNG
NOTICE D'INSTALLATION
GUÍA PARA LA INSTALACIÓN

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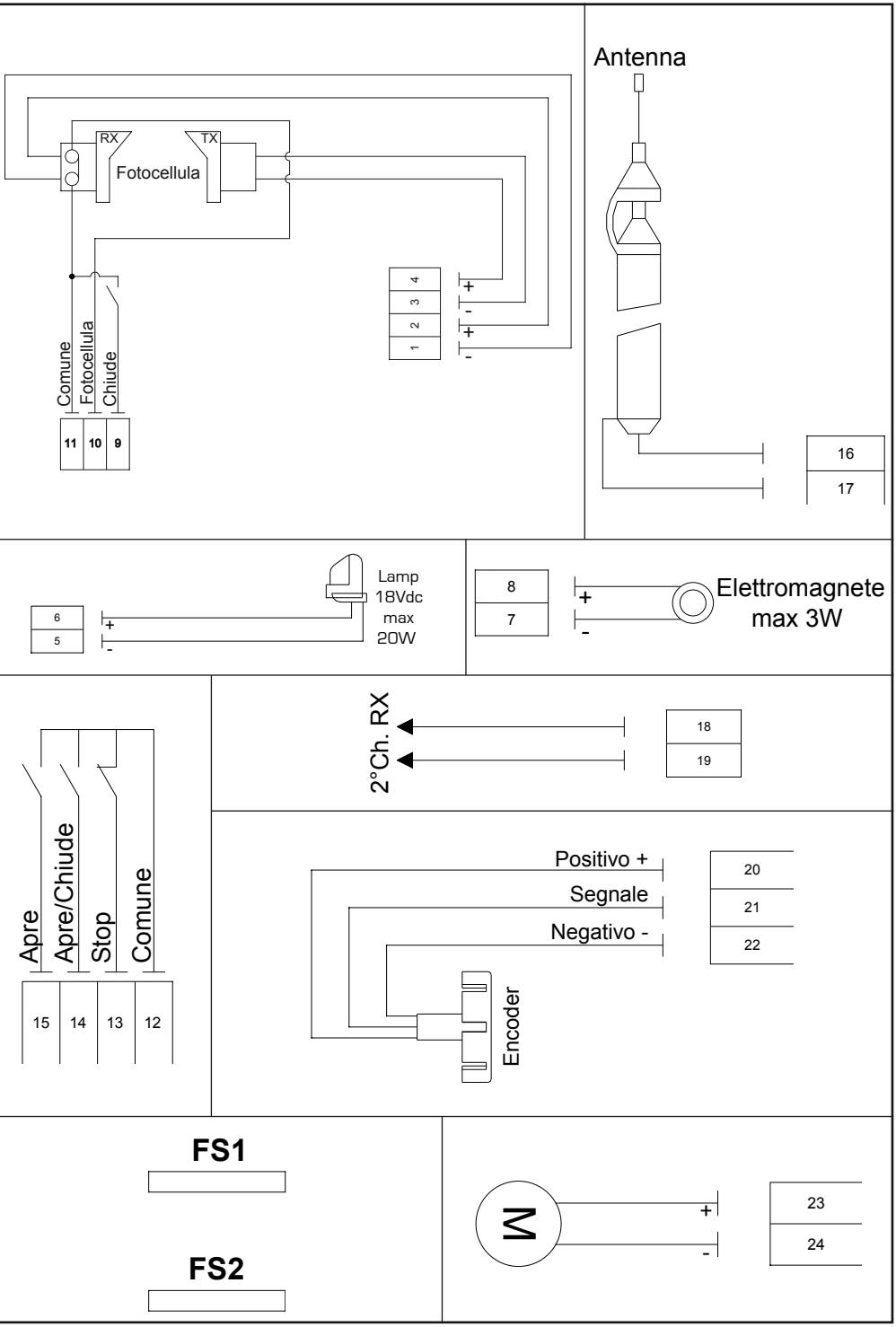
Antenna
RX
TX
Fotocellula
Comune
Fotocellula
Chiude
11
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9
1
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4
+
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+
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16
17
6
5
Lamp
18Vdc
max
20W
8
7
Elettromagnete
max 3W
Apre
Apre/Chiude
Stop
Comune
15
14
13
12
2°Ch. RX
18
19
Positivo +
Segnale
Negativo -
Encoder
20
21
22
FS1
FS2
M
23
24

CONTROL PANEL FOR AUTOMATIC BARS

- LOGICS WITH MICROPROCESSOR
- STATUS OF INPUTS SIGNALLED BY LEDs
- “PEDESTRIAN GATE” FUNCTION
- INCORPORATED FLASHING CIRCUIT
- ENCODER SENSOR FOR OBSTACLE DETECTION AND SELF-LEARNING OF TRAVEL
- RECEIVER CONNECTOR
- BATTERY AND BATTERY CHARGER CONNECTOR (OPTIONAL)
- DIAGNOSTICS OF MALFUNCTIONS SIGNALLED BY LED

TESTING

When you have completed the connection:

➡ All the green LS LEDs must be on (each of them corresponds to a Normally Closed input). The go off only when the controls to which they are associated are operated.

➡ All the red LS LEDs must be off (each of them corresponds to a Normally Open input). The light up only when the controls to which they are associated are operated.

INSTALLATION

Before proceeding, make sure the mechanical components work correctly. Also check that the gear motor assembly has been installed according to the instructions. Then make sure that the power consumption of the gear motor is not greater than 3A (otherwise the control panel may not work properly).

THE EQUIPMENT MUST BE INSTALLED “EXPERTLY” BY QUALIFIED PERSONNEL AS REQUIRED BY LAW.

NB : it is compulsory to earth the system and to observe the safety regulations that are in force in each country.

IF THESE ABOVE INSTRUCTIONS ARE NOT FOLLOWED IT COULD PREJUDICE THE PROPER WORKING ORDER OF THE EQUIPMENT AND CREATE HAZARDOUS SITUATIONS FOR PEOPLE. FOR THIS REASON THE “MANUFACTURER” DECLINES ALL RESPONSIBILITY FOR ANY MALFUNCTIONING AND DAMAGES THUS RESULTING.

ATTENTION:

- **do not use single cables (with one single wire), ex. telephone cables, in order to avoid breakdowns of the line and false contacts;**
- **do not re-use old pre-existing cables;**
- **we recommend to use the TAU cable code M-03000010C0 to connect the motors to the control board.**

TECHNICAL CHARACTERISTICS

Board power supply	13,5 Vac - 50 Hz
Max motor power DC	50 W - 18 Vdc
Fast acting fuse for protection of input power supply 13.5 Vac (F1 - 5x20)	F 16A
Fast acting fuse for motor protection (F2 - 5x20)	F 10A
Fast acting fuse for protection of auxiliary circuits 18 V dc (F3 - 5x20)	F 1,6A
Motor power supply circuits voltage	18 Vdc
Auxiliary device circuits supply voltage	18 Vdc
Logic circuits supply voltages	5 Vdc
Operating temperature	-20 °C ÷ +70 °C

CONNECTIONS TO TERMINAL BOARD

1 - 2 auxiliary circuits output 18 Vdc max. 15 W (1 = NEGATIVE - 2 = POSITIVE) for photocells, relays, receivers, etc...;

3 - 4 18 Vdc output for transmitter photocell – phototest - (3 = NEGATIVE - 4 = POSITIVE) max. no. 2 photocell transmitters;

5 - 6 18 Vdc max. 20W output for flashing light supply (5 = NEGATIVE - 6 = POSITIVE), flashing signal supplied by the control unit, rapid for closing, slow for opening;

7 - 8 max. 18 Vdc 3W electromagnetic power supply output (7 = NEGATIVE - 8 = POSITIVE);

9 - 11 CLOSE button N.O. input – Controls the total closure of the bar (9 = CLOSE - 11 = COM);

10 - 11 N.C. photocell input - it cuts in during the closing or the opening manoeuvre, see dip-switch no. 3 (10 = FOT - 11 = COM);

N.B. **The photocell transmitter must always be supplied by terminals no. 3 and no. 4, since the safety system test (phototest) is carried out on it. Without this connection, the control unit does not work. To override the testing of the safety system, or when the photocells are not used, set dip-switch no. 6 to OFF.**

12 - 13 STOP button N.C. input – Stops the bar in any position, temporarily preventing the automatic closure, if programmed (12 = COM - 13 = STOP);

12 - 14 OPEN/CLOSE button N.O. input – Controls the opening and closing of the bar and is regulated based on the function of dip-switches 2 and 4 (12 = COM - 14 = O/C);

12 - 15 OPEN button N.O. input – Controls the total opening of the bar (12 = COM - 15 = OPEN);

16 - 17 plug-in radio-receiver aerial input , for 40.665 MHz receivers only (16 = SIGNAL - 17 = GROUND);

18 - 19 2nd radio channel output - for control of an additional automation or for switching on lights, etc... (N.O. clean contact);

20 - 21 - 22 encoder supply and input (20 = BROWN positive - 21 = WHITE signal - 22 = BLUE negative);

23 - 24 motor supply output 18 Vdc max. 50 W;

FS1 - FS2 13.5 Vac control unit power supply input – Fed by the toroidal transformer and protected by the fuses on the 230 Vac power supply;

IMPORTANT:

- **do not connect auxiliary relays so as to avoid endangering the correct functioning of the control unit;**
- **do not connect switching feeders or similar apparatus close to the barrier that may be a source of disturbance;**

MEMORIZATION PROCEDURE

WARNING: After powering the control panel, wait 2 seconds before you start performing the adjustment operations.

N.B. The mechanical stops of the bar must be regulated both in opening and in closing [see RBL4 and CITY/M instructions].

When you have completed the installation procedures :

1_ place the bar at approx. 45°;
2_ set dip-switch no. 8 to ON;
3_ control the automation with one of the following inputs: O/C, radio control or control unit button.
4_ the bar should start to close.

N.B.: if it opens, stop the programming procedure by resetting the electric panel (disconnect the power supply to the panel for at least 5 sec. and set dip-switch no. 8 to OFF); with the control panel disconnected, exchange the motor supply wires. Restart the procedure from point 1.

5_ when the gate has closed, after approximately 2 seconds a complete opening manoeuvre is executed automatically;
6_ when the gate has opened, set dip-switch no. 8 to OFF;
7_ the automation is now ready for operation.

Make the logic adjustments.

N.B.: When any adjusting devices (trimmers or dip-switches) on the control panel are operated, a complete manoeuvre must be carried out in order for the new settings to take effect.

LOGIC ADJUSTMENTS

TRIMMER

RALL. slowdown distance adjustment: from about 10 to 100 cm;
T.C.A. Automatic Closing time adjustment: from about 0 to 25 seconds (see dip-switch no. 1);
FR. obstacle detection sensitivity adjustment.
NOTE: by rotating the TRIMMER FR. clockwise <u>the sensitivity of the gearmotor to obstacles diminishes</u> and therefore the thrust force increases**; vice-versa, by rotating it counter-clockwise, <u>the sensitivity of the gearmotor to obstacles increases</u>** and therefore the thrust force diminishes**.**

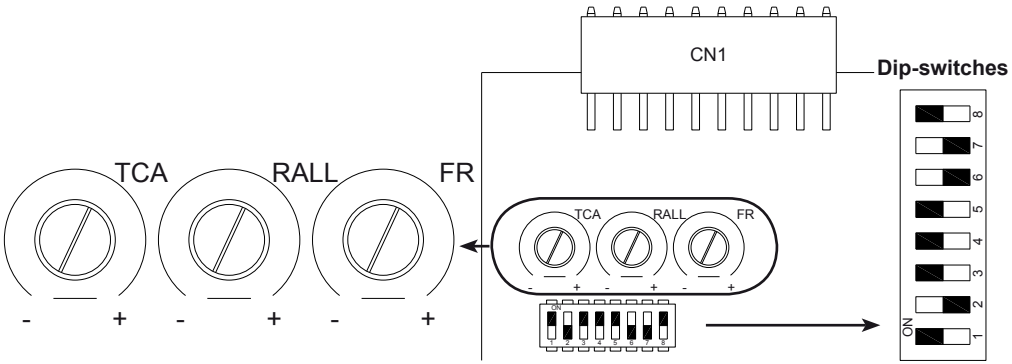
Dip switch

1 **on:** when completely open, closure is automatic after the set time on the T.C.A. trimmer has past;
off: the closing manoeuvre requires a manual command;
2 **on:** when the automation is operating, a sequence of opening/closing commands causes the bar to OPEN-CLOSE-OPEN-CLOSE, etc.
off: in the same conditions, the same sequence of commands causes the bar to OPEN-STOP-CLOSE-STOP-OPEN-STOP, etc . (step-by step function) (see also dip switch 4);
3 **on:** slowdown setting for CITY/M barrier;
off: slowdown setting for CITY/V and RBL4 barrier;
4 **on:** the bar responds as established by dip switch No. 2
off: the bar ignores the closure command during opening;
5 **on:** the pre-flashing function is enabled;
off: the pre-flashing function is disabled;
6 **on:** the “photocell test” function is enabled;
off: the “photocell test” function is disabled. N.B.: to be used when the photocells are not used;

7 **on:** set for CITY/V and RBL4;
off: set for CITY/M;

8 **on:** the memorization function is enabled for self-learning of the travel;
off: leave the dip-switch in this position when the memorization procedure has been completed.

Clock function:
A timer connected to the input of the open-close button can be used to keep the bar open during particular times of the day and also permits the automatic closure.



K205M CHARACTERISTICS

LED - DL3
The LED, besides indicating that the power supply is connected, also signals errors with a series of pre-defined flashes:

- steady light: normal operation;
- 1 flash: buffer battery voltage lower than 11.3 Vdc;
  Check the mains power supply, charge the battery, replace the battery;
- 2 flashes: phototest error;
  Disable phototest (dip-switch 6 OFF), check operation and connection of photocells;
- 3 flashes: power failure;
  Check the thermal-magnetic circuit breaker (upstream from system), check the fuses;
- 4 flashes: max current limit exceeded;
  Excessive absorption peaks of the gearmotor, check that there are no obstacles throughout the movement of the bar, check the motor's absorption of current when loadless and applied to the bar;
- 5 flashes: absence of encoder signal;
  Check wiring, check encoder through TEST-ENCODER (optional)
- 6 flashes: presence of obstacle after 5 failed attempts to close;
  Check that there are no obstacles throughout the movement of the bar and the balance of the bar;
- 7 flashes: no memorization procedure has been executed;
  Execute memorization procedure.
- 8 flashes: max no. of programmed manoeuvres has been exceeded (optional).
  Reset manoeuvre counter

N.B.: The microprocessor version installed in your control panel is not enabled for manoeuvre counting.

Multiple errors are signalled by a 2-second pause between signals. Errors will continue to be signalled until a complete opening and closing manoeuvre is executed.
If the safety devices are activated 5 consecutive times during the same opening or closing manoeuvre, the control unit will switch to slow-down mode as it searches for the closing travel limit. To reset, the gate must execute a complete opening and closing cycle, otherwise the travel limit search phase will start again each time the safety devices are activated.

FLASHING LIGHT (18 Vdc - max. 20W)
Besides signalling the opening and closing of the gate, at the end of the opening or closing manoeuvre it also signals errors with a series of pre-defined flashes, which last for max 30 seconds.

- steady light: normal operation;
- 1 flash: buffer battery voltage lower than 11.3 Vdc;
  Check the mains power supply, charge the battery, replace the battery.
- 2 flashes: phototest error;
  Disable phototest (dip-switch 6 OFF)
- 3 flashes: power failure;
  Check the thermal-magnetic circuit breaker (upstream from system), check the hour counter.
- 4 flashes: max current limit exceeded;
  Excessive absorption peaks of the gearmotor, check that there are no obstacles throughout the movement of the bar, check the motor's absorption of current when loadless and applied to the bar;
- 5 flashes: absence of encoder signal;
  Check wiring, check encoder through TEST-ENCODER (optional).
- 6 flashes: presence of obstacle after 5 failed attempts to close;
  Check that there are no obstacles throughout the movement of the bar and the balance of the bar;
- 7 flashes: no memorization procedure has been executed;
  Execute memorization procedure.
- 8 flashes: max no. of programmed manoeuvres has been exceeded (optional).
  Reset manoeuvre counter

N.B.: The microprocessor version installed in your control panel is not enabled for manoeuvre counting.

Multiple errors are signalled by a 2-second pause between signals. Errors continue to be signalled until a complete opening and closing manoeuvre is executed.

GATE OPEN WARNING LIGHT (18 Vdc - max. 3W)
The gate open warning light flashes during the opening or closing manoeuvre in synchrony with the flashing light, then shows a steady light when the gate has opened completely. Once the closing manoeuvre has been completed this light goes off .
In addition, the gate open warning light signals the following:
- programming phase (when dip-switch 8 is set to ON);

it flashes in sync with the flashing light;
- mains power supply restored

it emits a series of flashes for approx. 2 seconds;
- presence of obstacles across the path of the gate after 5 attempts to close have failed;

it flashes in sync with the flashing light.

BATTERY CHARGER BOARD (OPTIONAL)
If the system is equipped with a battery charger board, it con operate even during power failures. If the voltage drops below 11.3 Vdc, the automation stops working (the control panel is still powered). When it drops below 10.2 Vdc, the board disconnects the battery completely (the control panel is no longer powered).

OBSTACLE DETECTION

If the obstacle detection function (which can be set through trimmer FR) is activated during an opening manoeuvre, the gate closes approx. 20 cm., if it is activated during a closing manoeuvre, the gate opens all the way .

WARNING: the control panel logics may interpret mechanical friction as an obstacle.

SLOW-DOWN

In order to avoid that the bar slams at the end of its movement, the slowdown of the bar during opening and closing can be set (by means of the RALL trimmer) at a distance between 10 and 100 cm (rotating the trimmer clockwise the slowdown distance is increased; vice versa, turning the trimmer anti-clockwise the slowdown distance is shortened). **Set the RALL trimmer to its maximum for CITY/V and RBL.**

N.B.: the P1 button on the control unit has the same function as the OPEN/CLOSE button.

TIMER-OPERATED OPENING AND CLOSING CYCLES

The opening/closing of the automation can be controlled by means of a timer that has a free N.O. output contact (relay). The timer must be connected to terminals 12 - 14 (OPEN/CLOSE button) and can be programmed so that, at the desired opening time, the relay contact closes until the desired closing time (when the timer's relay contact opens, enabling the automatic closing of the gate).

N.B.: The automatic closing function must be enabled by setting Dip-switch no. 1 to ON).

DIAGNOSTICS LED

DL1	OPEN button red LED signal
DL2	OPEN/CLOSE button red LED signal
DL3	ERRORS red LED signal
DL4	STOP button green LED signal
DL5	PHOTOCELL green LED signal
DL6	CLOSE button red LED signal

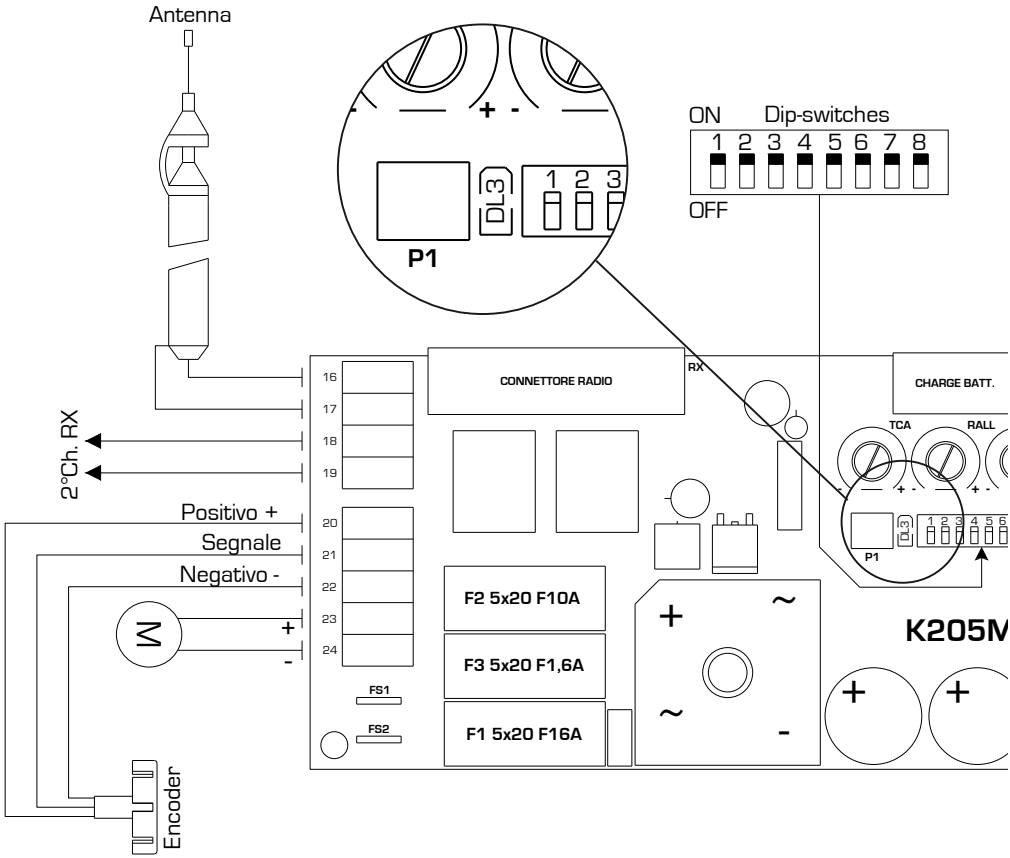
MALFUNCTIONS: POSSIBLE CAUSES AND SOLUTION

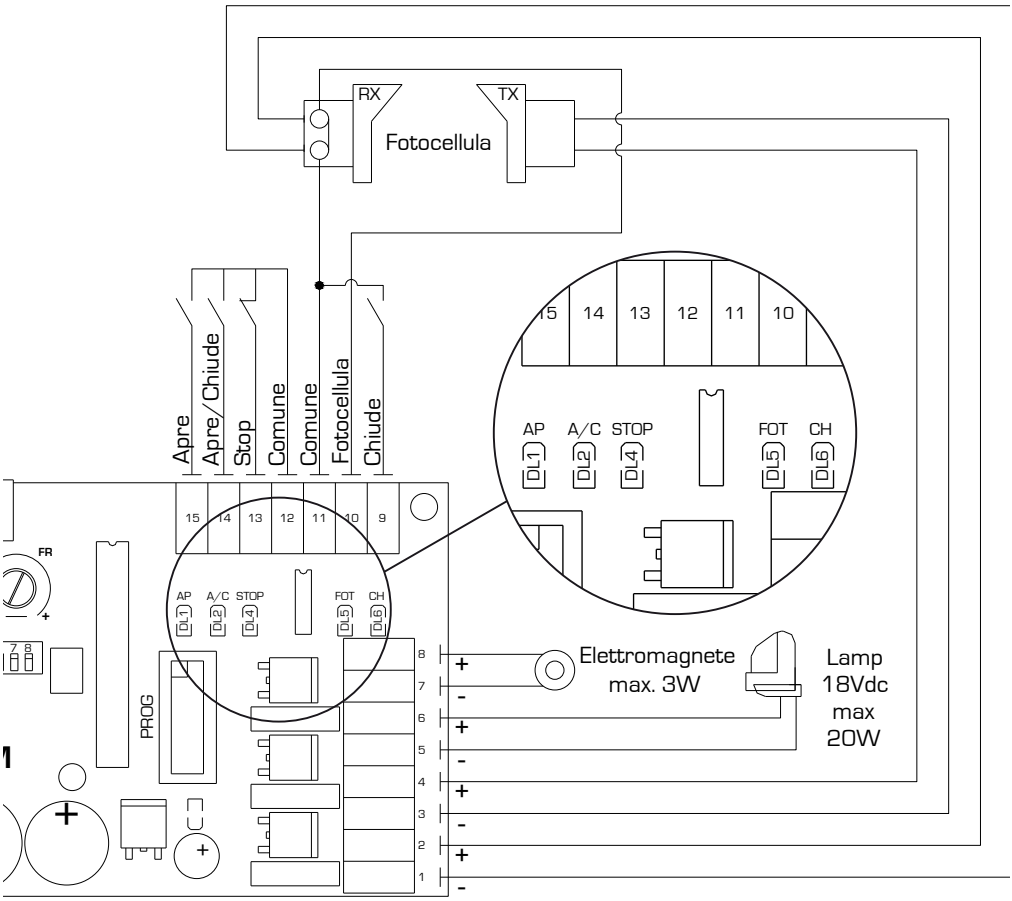
1- The automation does not start
- a- Check there is 230Vac power supply with the multimeter;
- b- Check that the NC contacts of the card are actually normally closed (3 green LEDs on);
- c- Set dip 6 (phototest) to OFF;
- d- Increase the FR trimmer to the limit;
- e- Check that the fuses are intact with the multimeter.

2- The radio control has very little range
- a- Connect the radio aerial to the terminals of the receiver card and not to terminals 16-17 of the control card (for frequency 433,92 MHz);
- b- Check that the ground and the aerial signal connections have not been inverted;
- c- Do not make joints to increase the length of the aerial wire;
- d- Do not install the aerial in a low position or behind walls or pillars;
- e- Check the state of the radio control batteries.

3- The gate opens the wrong way

Invert the motor connections on the terminal block (terminals 23 and 24);


Antenna
P1
DL3
1 2 3
ON
Dip-switches
1 2 3 4 5 6 7 8
OFF
CONNETTORE RADIO
RX
CHARGE BATT.
TCA
RALL
2°Ch. RX
Positivo +
Segnale
Negativo -
16
17
18
19
20
21
22
23
24
+
-
F2 5x20 F10A
F3 5x20 F1,6A
F1 5x20 F16A
FS1
FS2
K205M
Encoder


RX
TX
Fotocellula
Apre
Apre/Chiude
Stop
Comune
Comune
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Chiude
15 14 13 12 11 10
AP A/C STOP FOT CH
DL1 DL2 DL4 DL5 DL6
15 14 13 12 11 10 9
AP A/C STOP FOT CH
DL1 DL2 DL4 DL5 DL6
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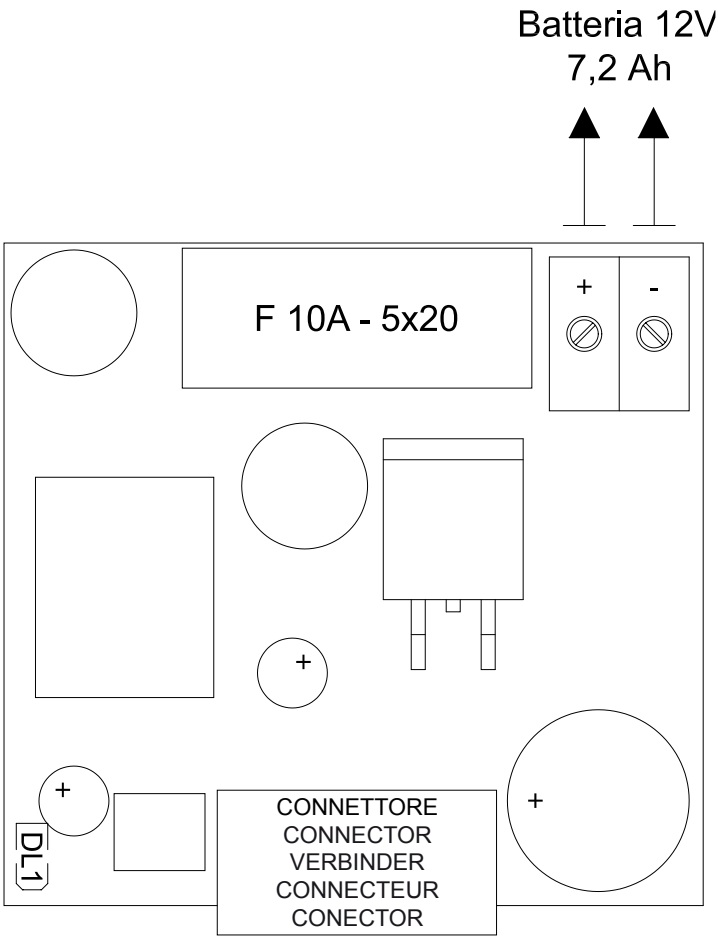
PROG
8 7 6 5 4 3 2 1
+ - + - + - + -
Elettromagnete
max. 3W
Lamp
18Vdc
max
20W



F 8A - 5x20 Fusibile rapido 10 Ah 5x20 a protezione della batteria 12 V 7,2 Ah
DL1 led verde di segnalazione presenza di tensione di rete.

F 8A - 5x20 *10 Ah 5x20 fast-acting fuse for protection of 12 V 7.2 Ah battery*
DL1 *Presence power supply green LED signal.*

F 8A - 5x20 Schnellsicherung 10 Ah 5x20 zum Schutz der Batterie 12 V 7,2 Ah
DL1 grüne LED für Stromverorgungs Kontrolle.

F 8A - 5x20 *Fusible rapide 10 Ah 5x20 pour la protection de la batterie 12 V 7,2 Ah*
DL1 *led verte de signalisation présence de courant.*

F 8A - 5x20 Fusible rápido 10 Ah 5x20 como protección de la batería 12 V 7,2 Ah
DL1 led verde de aviso presencia de alimentación.