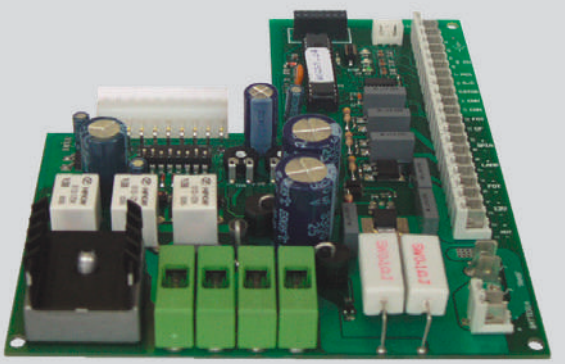
>MOVING LIFE

K123M

QUADRO DI COMANDO PER MOTORIDUTTORE MASTER12Q
CONTROL PANEL FOR MASTER12Q GEARMOTOR
SCHALT- UND STEUERTAFEL FÜR DEN GETRIEBEMOTOR MASTER12Q
LOGIQUE DE COMMANDE POUR MOTORÉDUCTEUR MASTER12Q
PANEL DE MANDOS PARA MOTORREDUCTOR MASTER12Q



>ITALIANO
>ENGLISH
>DEUTSCH
>FRANÇAIS
>ESPAÑOL

GUIDA ALL'INSTALLAZIONE
INSTALLATION GUIDE
INSTALLATIONSANLEITUNG
NOTICE D'INSTALLATION
GUÍA PARA LA INSTALACIÓN

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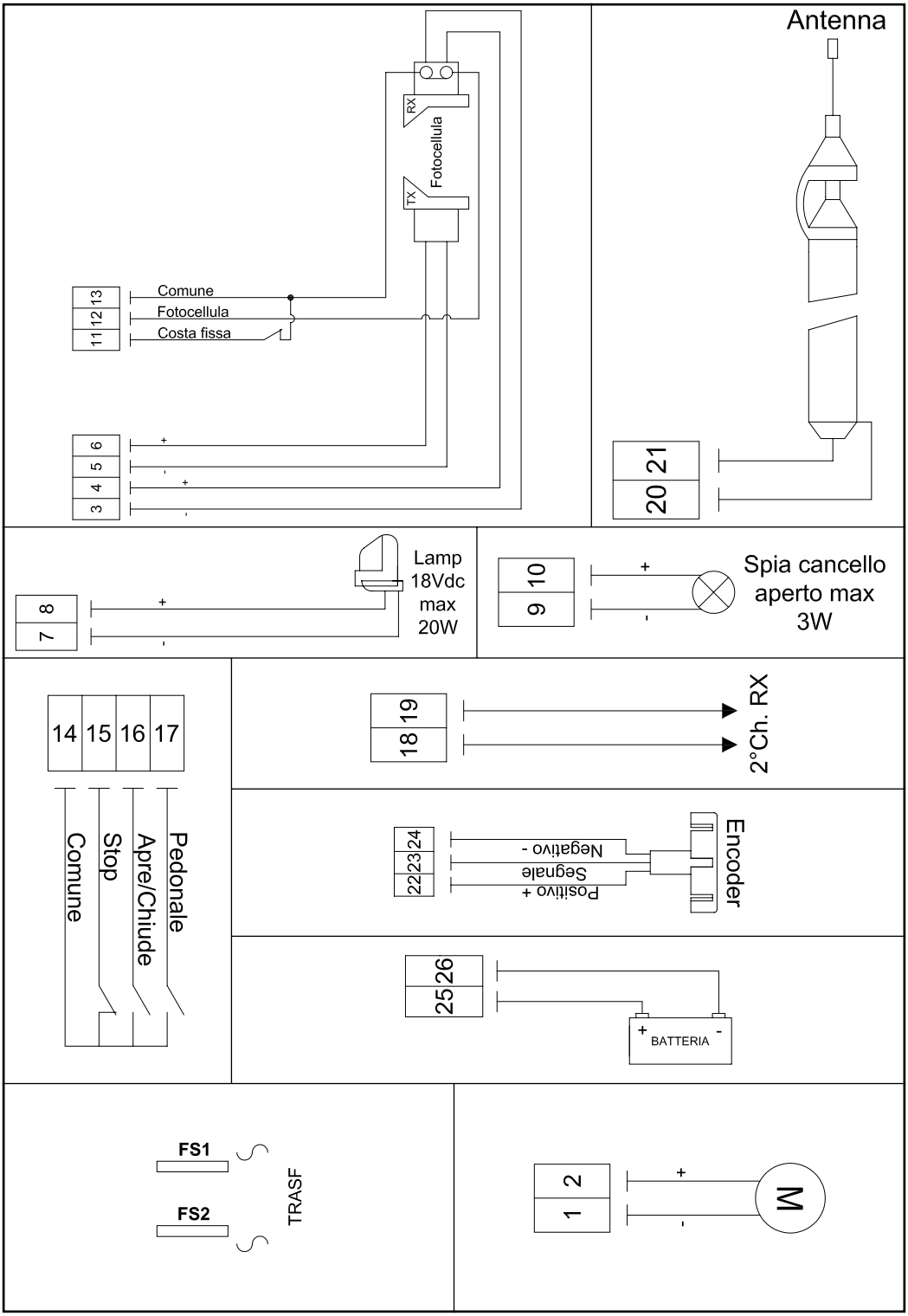
Antenna
RX
Fotocellula
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Comune
Stop
Apre/Chiude
Pedonale
18 19
2°Ch. RX
22 23 24
Negativo -
Segnale
Positivo +
Encoder
25 26
+
BATTERIA
-
FS1
FS2
TRASF
1 2
+
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M

CONTROL BOARD FOR MASTER12Q GEARMOTOR

- 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 CONNECTOR
- BATTERY CHARGER BOARD (INTEGRATED)
- 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.

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 15A
Fast acting fuse for motor protection (F2 - 5x20)	F 15A
Fast acting fuse for protection of auxiliary circuits 18 V dc (F3 - 5x20)	F 1,6A
Fast acting fuse for protection of battery (F4 - 5x20)	F 10A
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 motor supply output 18 Vdc max. 50 W;

3 - 4 auxiliary circuits output 18 Vdc max. 15 W (3 = NEGATIVE - 4 = POSITIVE) for photocells, relays, receivers, etc...;

5 - 6 18 Vdc output for transmitter photocell – phototest - (5 = NEGATIVE - 6 = POSITIVE) max. no. 1 photocell transmitter;

7 - 8 18 Vdc max. 20W output for flashing light supply (7 = NEGATIVE - 8 = POSITIVE), flashing signal supplied by the control unit, rapid for closing, slow for opening;

9 - 10 18 Vdc max. 3W output for supply to open and moving gate warning light (9 = NEGATIVE - 10 = POSITIVE);

11 - 13 N.C. input for electromechanical sensitive edge – it cuts in during the opening manoeuvre, locking and re-closing the gate by ~20 cm (11 = C.F. - 13 = COM);

12 - 13 N.C. photocell input - it cuts in during the closing or the opening manoeuvre, see dip-switch no. 3 (12 = FOT - 13 = COM);

N.B. **The photocell transmitter must always be supplied by terminals no. 5 and no. 6, 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.**

14 - 15 N.C. input for STOP button – It stops the gate in any position, temporarily inhibiting its automatic closing, if programmed (14 = COM - 15 = STOP);

14 - 16 N.O. input for OPEN/CLOSE button - It commands the opening and closing of the gate and its operation is controlled by dip-switches 2 and 3 (14 = COM - 16 = A/C);

14 - 17 N.O. input for PEDESTRIAN button - It commands the partial opening and closing of the gate for ~1 m of travel and its operation is controlled by dip-switches 2 and 3 (14 = COM - 17 = PED);

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

20 - 21 plug-in radio-receiver aerial input , for 40.665 MHz receivers only (20 = SIGNAL - 21 = GROUND);

22 - 23 - 24 encoder supply and input (22 = BROWN positive - 23 = WHITE signal - 24 = BLUE negative);

25 - 26 battery 12V - 7,2Ah input;

FS1 - FS2 board supply input 13.5 Vac – Powered by the toroidal transformer housed in the MASTER12Q motor and protected by a fuse on the 230 Vac power supply ;

MEMORIZATION PROCEDURE

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

N.B. The gate must be equipped with the opening and closing safety stops.

When you have completed the installation procedures :

1_ bring the gate to approx. 1 m from the closing travel limit;

2_ set dip-switch no. 8 to ON;

3_ operate the automation using one of the following inputs: A/C, radio control or card button.

4_ the gate must 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 3 to 255 seconds (see dip-switch no. 1);

FR. obstacle detection sensitivity adjustment.

NOTE: by rotating the TRIMMER FR. clockwise the sensitivity of the gearmotor to obstacles diminishes and therefore the thrust force increases**; vice-versa, by rotating it counter-clockwise, the sensitivity of the gearmotor to obstacles increases** and therefore the thrust force diminishes**.**

Dip switch

1 on: when the gate has opened, it closes automatically after the time established through the T.C.A. trimmer;
off: the closing manoeuvre requires a manual command;

2 on: when the automation is operational, a sequence of opening/closing commands causes the gate to OPEN-CLOSE-OPEN-CLOSE etc.
off: under the same circumstances, the same sequence of commands causes the gate to OPEN-STOP-CLOSE-STOP-OPEN-STOP, etc. (step-by-step function) (see also dip switch 4);

3 on: during the opening phase, the photocell cuts in, stopping the gate until the detected obstacle has been removed. During the closing phase, it causes the gate to stop and then to open again all the way;
off: during the opening phase the photocell does not cut in, while during the closing phase it behaves in the same way as it does when in the ON mode;

4 on: the gate behaves as established by dip switch no. 2
off: the gate ignores the closing commands during the opening manoeuvre;

5 on: the pre-flashing function is enabled;
off: the pre-flashing function is disabled;

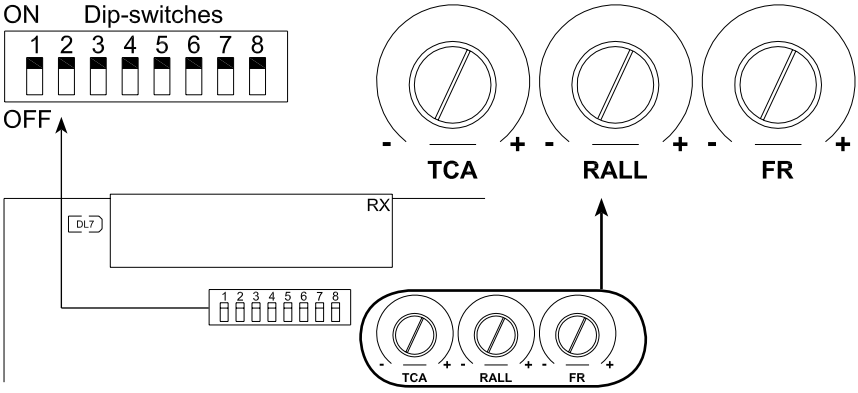
6 on: the “photocell test” function is enabled;
off: the “photocell test” function is disabled. N.B.: to be used when the photocells are not used;

7 on: following the connection of the photocell contact (input 10 - 11), the gate closes automatically after 5 seconds;
off: function disconnected;

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 can be connected to the open-close pushbutton in order to keep the gate open at certain times during the day, after which it reverts to automatic closing.



K123M 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;
  Gearmotor has exceeded absorption limits, check for obstacles across the path of the gate, check the current absorption of the motor when loadless and under load;
- 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;
  Make sure there are no obstacles across the path of the gate and that it slides smoothly;
- 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;
  Gearmotor has exceeded absorption limits, check for obstacles along the path of the gate.
- 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;
  Make sure there are no obstacles across the path of the gate.
- 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 (INTEGRATED)
If the battery is connected the automation will operate in any case if there is no mains power supply. If the voltage drops below 11.3 Vdc, the automation ceases to operate (the control unit remains fed); whereas, when the voltage drops below 10.2 Vdc, the card completely disconnects the battery (the control panel is no longer fed)

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

To prevent the gate from shuddering at the end of its travel, you can set (through the RALL trimmer) the slow down function for the opening and closing manoeuvres at a distance of 10 to 100 cm from the end of travel (by rotating the trimmer clockwise the slow-down distance is increased; vice-versa, by rotating it counter-clockwise the slow-down distance is diminished). When setting the slow-down distance, you should take into account the weight of the gate as well as mechanical frictions.

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

TIMER-OPERATED OPENING AND CLOSING CYCLES

The opening and closing of the gate can be controlled through a digital timer equipped with a relay contact on the output. 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	PEDESTRIAN 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	SENSITIVE EDGE green LED signal
DL7	BATTERY CHARGER green LED signal

MALFUNCTIONS: POSSIBLE CAUSES AND SOLUTION

1- The automation does not start

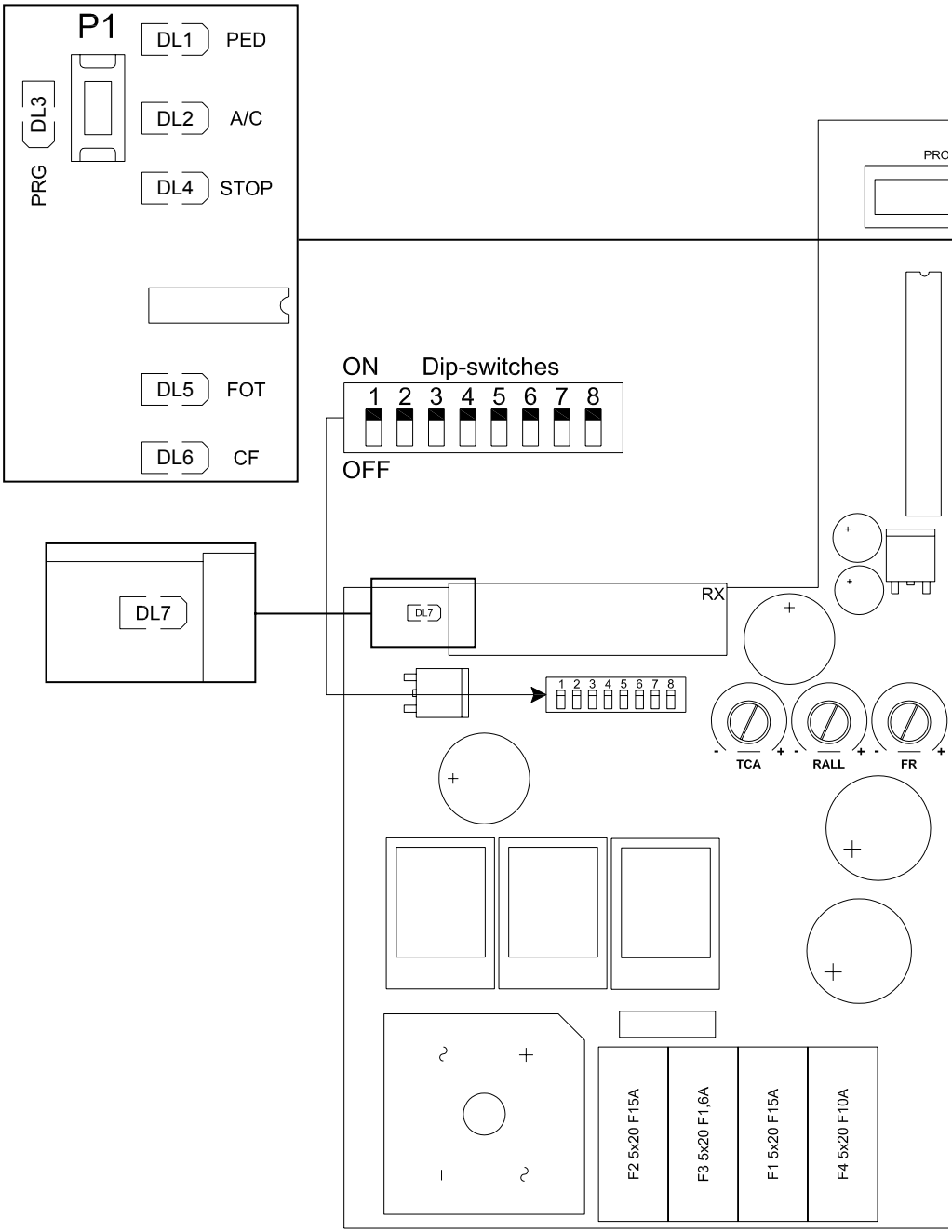
a- Check there is 230Vac power supply with the multimeter;
b- Check that the NC contacts of the card are actually normally closed (3 green LEDs on);
c- Set dip 6 (phototest) to OFF;
d- Increase the FR trimmer to the limit;
e- Check that the fuses are intact with the multimeter.

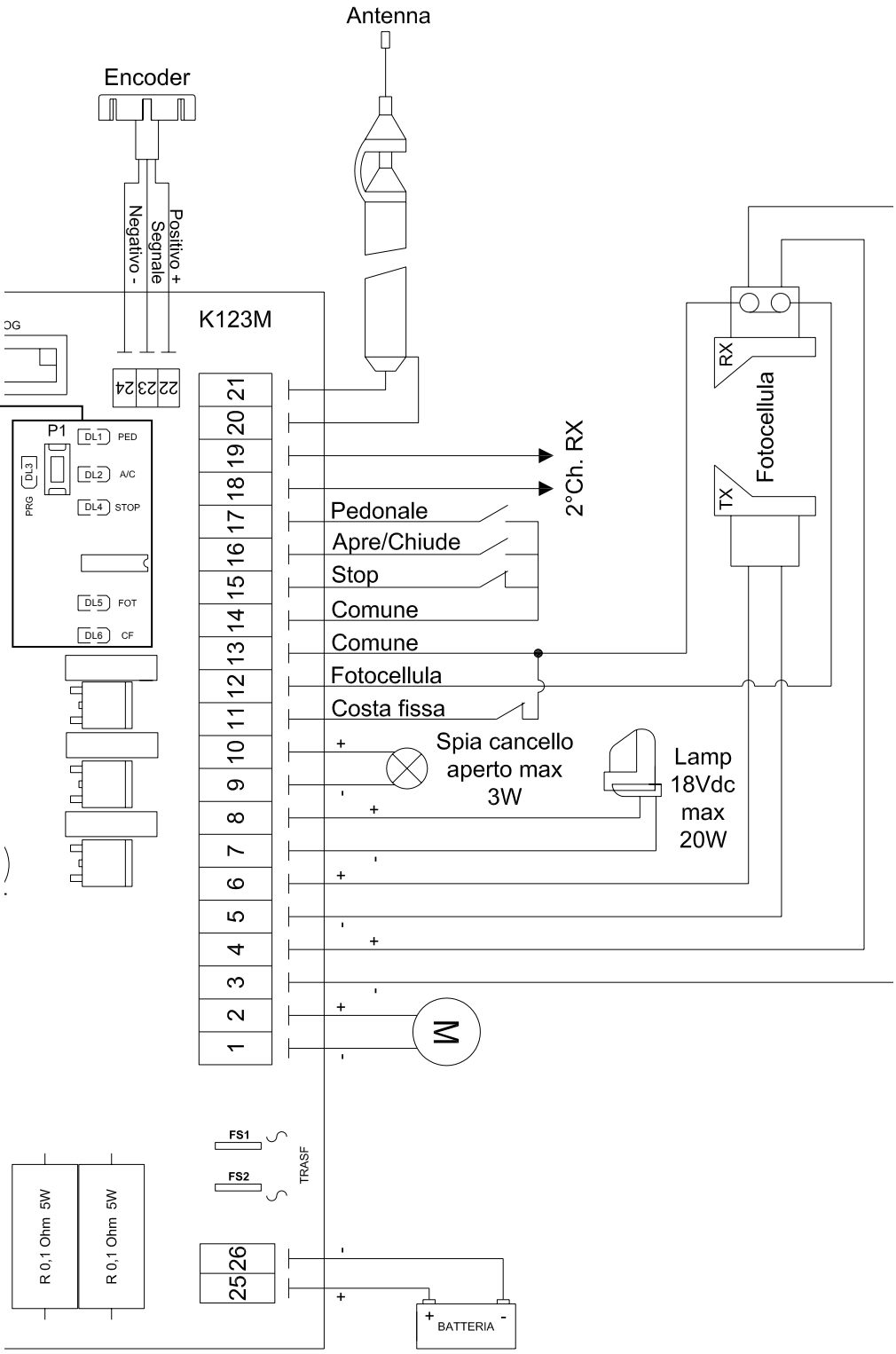
2- The radio control has very little range

a- Connect the radio aerial to the terminals of the receiver card and not to terminals 20-21 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 1 and 2);


P1
DL1 PED
DL2 A/C
DL3
PRG
DL4 STOP
DL5 FOT
DL6 CF
PRG
ON
Dip-switches
1 2 3 4 5 6 7 8
OFF
DL7
RX
TCA
RALL
FR
F2 5x20 F15A
F3 5x20 F1,6A
F1 5x20 F15A
F4 5x20 F10A


Antenna
Encoder
Negativo -
Segnale
Positivo +
K123M
P1
DL1 PED
DL2 A/C
DL3
PRG
DL4 STOP
DL5 FOT
DL6 CF
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2°Ch. RX
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TX
Fotocellula
Pedonale
Apre/Chiude
Stop
Comune
Comune
Fotocellula
Costa fissa
Spia cancello aperto max 3W
Lamp 18Vdc max 20W
M
FS1
FS2
TRASF
R 0,1 Ohm 5W
R 0,1 Ohm 5W
25 26
BATTERIA

SELF INSTALL - NEED TECHNICAL ASSISTANCE?

OPTION 1: DIRECT WITH THE SERVICE DESK – QUICKEST AND MOST EFFECTIVE METHOD

Submit your enquiry direct with the service desk at – service@automaticsolutions.com.au
The service desk has the most experienced staff in Australia to help with your problem but they need your help.

- **Describe your problem in detail and as clearly as possible. Don't forget to include a telephone number.**
- **Be certain to detail which model or models of you are working with.**
- **Send photos of the installation – they love photos. The people at the service desk are good but they are even better when they can see the installation. Send photos of the overall scene so they can see the entire installation. Also send photos of the wiring to the control board and any other part of the installation you think is relevant.**
- **Send video if appropriate. Smartphone's these days take remarkably good video in small file sizes which can be emailed in a moment. If your problem needs a video to show the issue please feel free to send it.**

NOTE: THIS IS BY FAR THE FASTEST AND MOST SUCCESFUL WAY TO SOLVE YOUR PROBLEM
PHOTOS AND VIDEOS ARE THE NEXT BEST THING TO BEING THERE

OPTION 2: LODGE YOUR ENQUIRY LOCALLY - SLOWER BUT CAN STILL BE EFFECTIVE

Make contact with the store of purchase. Branch staffs are typically not technicians and dependent on their length of service will have varying degrees of technical knowledge. If they cannot help however they will certainly either source help locally from their technicians or make contact with the service technicians on your behalf.

OPTION 3: SERVICE CALL WITH AUTOMATIC SOLUTIONS TECHNICIAN – SLOWEST METHOD

If you fall within the local branch service area it may be possible to book a local technician to look at your installation. Wait times will vary dependent on local workloads. The cost is a service fee which includes the first half hour and the hourly rate thereafter. If any Automatic Solutions provided parts are found to be defective and within warranty these will be provided free of charge.
(NOTE: If you suspect that any parts are defective and within warranty you may wish to consider option 4)

A note on this option: If you decide on this option you will be asked to sign an "authorisation to proceed" which will provide legal authority and payment security. This form has three options available of which only the first two are available to you. The third option is for warranty repairs only for full install customers. Self install customers requiring warranty only service need to refer to option four below.

IMPORTANT: IN SHORT THIS OPTION WILL INCUR CHARGES

OPTION 4: RETURN THE PRODUCT IF BELIEVED TO BE FAULTY

As a self install customer who has purchased product if you believe the product to be faulty rather than an installation or site problem you have the option of returning the product for evaluation and to exercise your right to a replacement, repair or refund as applicable. All returned product is forwarded immediately to the service technicians for evaluation and response. There are two main methods available to return product –

- **Direct to the service centre – this is the quickest method as it cuts out the branch delay**
- **Via the branch of purchase – slower because of the delay at the branch**

When choosing this option you need to complete a product return form. This form gives you all the information on procedure involved and where to send to. These are available at the branch of purchase, can be emailed to you (contact your branch), or available here - http://automaticsolutions.com.au/page/warranty.php