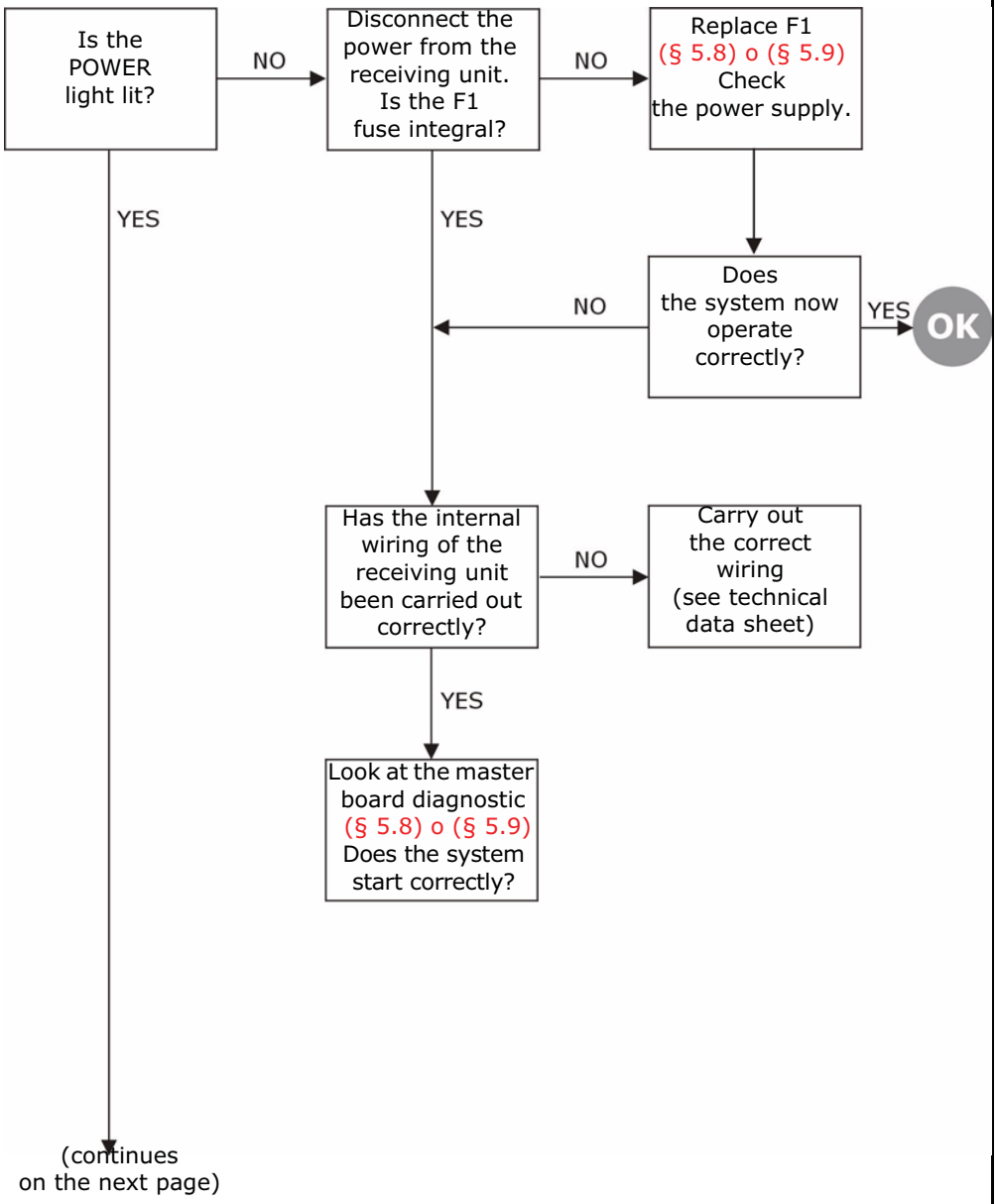
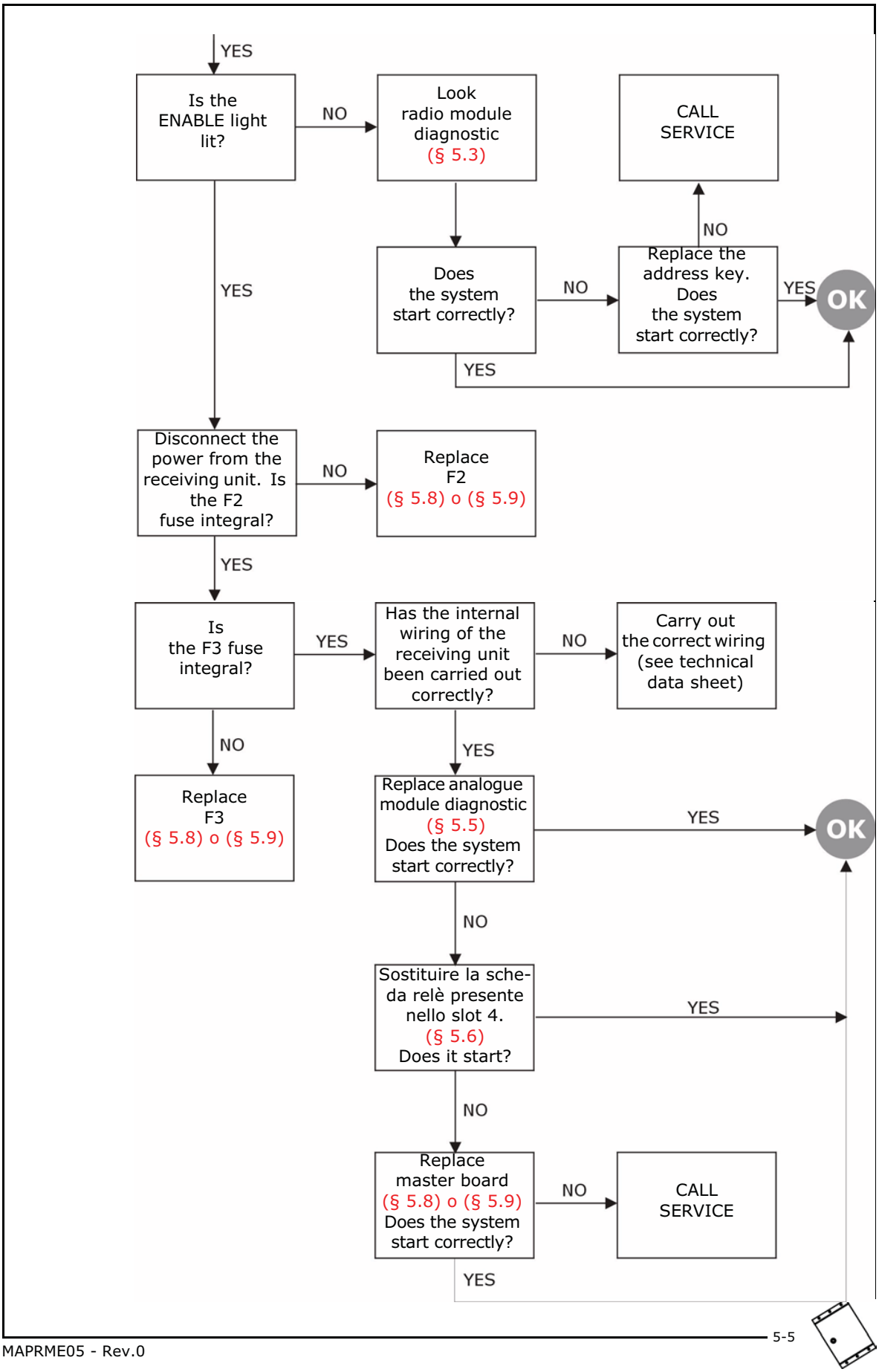
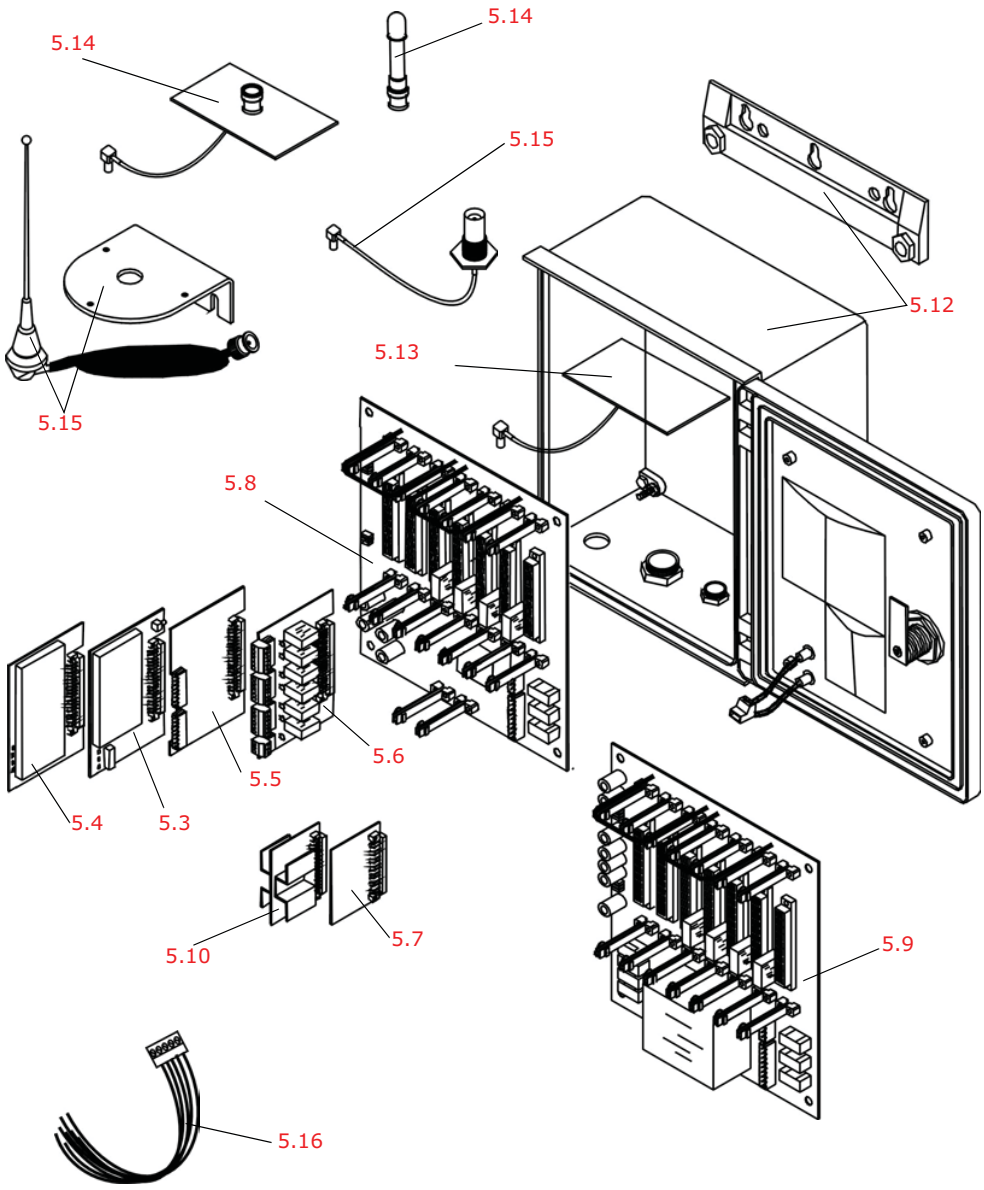
5.1 Receiving unit diagnostic




YES
Is the ENABLE light lit?
NO
Look radio module diagnostic (§ 5.3)
CALL SERVICE
NO
YES
Does the system start correctly?
NO
Replace the address key. Does the system start correctly?
YES
OK
YES
Disconnect the power from the receiving unit. Is the F2 fuse integral?
NO
Replace F2 (§ 5.8) o (§ 5.9)
YES
Is the F3 fuse integral?
YES
Has the internal wiring of the receiving unit been carried out correctly?
NO
Carry out the correct wiring (see technical data sheet)
NO
YES
Replace F3 (§ 5.8) o (§ 5.9)
Replace analogue module diagnostic (§ 5.5) Does the system start correctly?
YES
OK
NO
Sostituire la sche-da relè presente nello slot 4. (§ 5.6) Does it start?
YES
NO
Replace master board (§ 5.8) o (§ 5.9) Does the system start correctly?
NO
CALL SERVICE
YES

5.2 Exploded view and spare parts

Exploded view



Spare parts

N°	Code	Description
5.14	F0ANTE00E17A0	External antenna at 433 MHz
5.13	F0ANTE00E30A0	Internal antenna at 870 MHz
5.8	F0BASE00E39A0	24 Vdc master board (SBR97DC01)
5.8	F0BASE00E39B0	24 Vdc master board for external antenna (SBR97DC03)
5.8	F0BASE00E39C0	24 Vdc master board for cable control (SBR97DC05)
5.9	F0BASE00E40A0	ac master board (SBR97AC01)
5.9	F0BASE00E40C0	ac master board for external antenna (SBR97AC02)
5.8	F0BASE00E46A0	12 Vdc master board (SBR97DC01)
5.8	F0BASE00E46B0	12 Vdc master board for external antenna (SBR97DC03)
5.8	F0BASE00E46C0	12 Vdc master board for cable control (SBR97DC05)
5.15	F0CAVI00E89A0	Internal extension cable for antenna (40 cm)

5.16	F0CAVI01E18A0	Cable for wiring with recovery diodes
5.10	F0ESBA01E02A0	24V power supply card (SBA97V24D02A)
5.10	F0ESBA01E06A0	24V power supply card (SBA97V12-24L)
5.10	F0ESBA01E06B0	12V power supply card (SBA97V12-24K)
5.4	F0RIDE00E10A0	RD97-00A receiver decoder module
5.4	F0RIDE00E10B0	RD97-00B receiver decoder module with SAFETY progr.
5.3	F0RIRA00E11A0	MRXEU03A radio receiver module (frequency 433 MHz)
5.3	F0RIRA00E11B0	MRXAU03A radio receiver module (frequency 472 MHz)
5.3	F0RIRA00E11D0	MRXUK03A radio receiver module (frequency 458 MHz)
5.3	F0RIRA00E14A0	MRXEU06B radio receiver module (frequency 870 MHz)
5.14	F0SCIN00E50A0	Support for external antenna
5.6	F0ESBA00E03A0	24V 7 relay card (SR97R07S1LA)
5.6	F0ESBA00E05A0	24V 7 relay card with double contact SR97R07S2LA
5.6	F0ESBA00E07A0	12V 7 relay card (SR97R07S1KA)
5.6	F0ESBA00E08A0	12V 7 relay card with double contact (SR97R07S2KA)
5.6	F0ESBA00E11A0	24V 7 relay card (SR97IR7S1LA) for IR system
5.6	F0ESBA00E13A0	24V 9 relay card with 2 relays for SAFETY (SR97R09S1LA)
5.6	F0ESBA00E14A0	24V 7 relay card for up/down analogue commands (SR97R07V1LA)
5.6	F0ESBA00E15A0	24V 7 relay card for BCD analogue commands (SR97R07V4LA)
5.6	F0ESBA00E16A0	24V 7 relay card with double contact with FLOW (SR97R07S2LB)
5.6	F0ESBA00E17A0	24V 8 relay card with a configurable relay (SR97R08S1LA)
5.6	F0ESBA00E18A0	24V 8 relay card with a configurable relay (SR97R08S1KA)
5.6	F0ESBA00E19A0	24V 5 relay configurable card (SR97R05S1LA)
5.6	F0ESBA00E20A0	14V 5 relay configurable card (SR97R05S1KA)
5.6	F0ESBA00E29A0	24V 7 relay card for BCD/PWM analogue comm. (SR97R07P4LA)
5.15	G0ANTE00E10A0	433 MHz external antenna with 5 metre cable
5.15	G0ANTE00E27A0	433 MHz external antenna with 10 metre cable
5.15	G0ANTE00E28A0	433 MHz external antenna with 1 metre cable
5.15	G0ANTE00E31A0	870 MHz external antenna with 5 metre cable
5.7	G0INRI00E39A0	24V 3 relay TS, ENA, F1 (RI97R03S1LA)
5.7	G0INRI00E39B0	24V 3 relay ENA, ENA, F1 (RI97R03S1LB)
5.7	G0INRI00E40A0	12V 3 relay TS, ENA, F1 (RI97R03S1KA)
5.7	G0INRI00E40B0	12V 3 relay ENA, ENA, F1 (RI97R03S1KB)
5.5	G0INRI00E45A0	RI97-08V0ZA analogue receiver module with voltage outputs
5.5	G0INRI00E46A0	RI97-08P0ZA analogue receiver module with PWM outputs
5.12	R0CASS00P03A0	Receiving case with 24/64 pole plug
5.12	R0CASS00P04A0	Receiving case with cable entry
5.12	R0CASS00P05A0	Receiving case with 32 pole (reduced) plug
5.12	R0CASS00P06A0	Receiving case with 40 pole plug
5.12	R0CASS00P18A0	Receiving case with 32 pole pug with cover

"N°" is the paragraph number which refers to the spare part.

Warning

No voltage should be present when carrying out any internal operations (replacement or programming) on the receiving unit, therefore make sure that the power is disconnected from the receiving unit before proceeding.

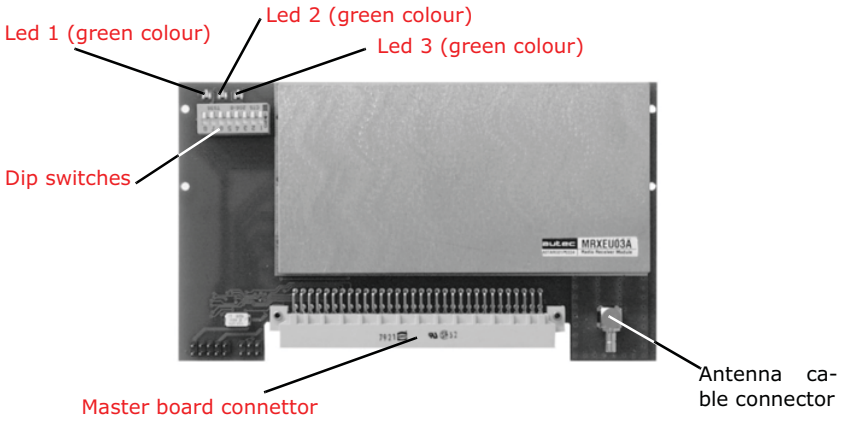
5.3 Radio receiver module (MRX__0__)

Codici

MRXEU03A	Radio receiver module frequency 433 MHz
MRXUK03A	Radio receiver module frequency 458 MHz (module for England)
MRXEU06B	Radio receiver module frequency 870 MHz
MRXAU03A	Radio receiver module frequency 472 MHz (module for Australia)

Always make sure that the frequencies at which the radio receiving module operates are permitted in the country where the radio remote control is to be used.

Module components

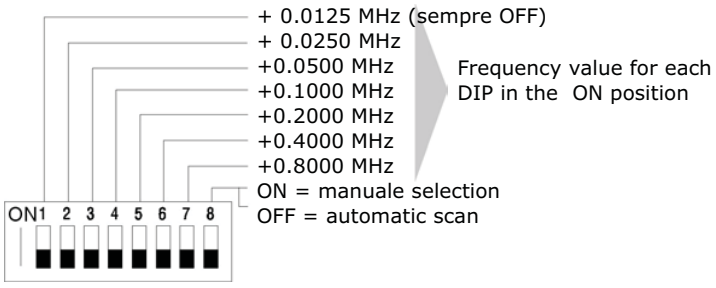


Leds

The three LEDs that are present indicate if the radio receiving module:
- is being supplied correctly (LED 1)
- is receiving a radio signal at the operating frequency (LED 2)
- is scanning the frequencies (when LED 3 blinks)

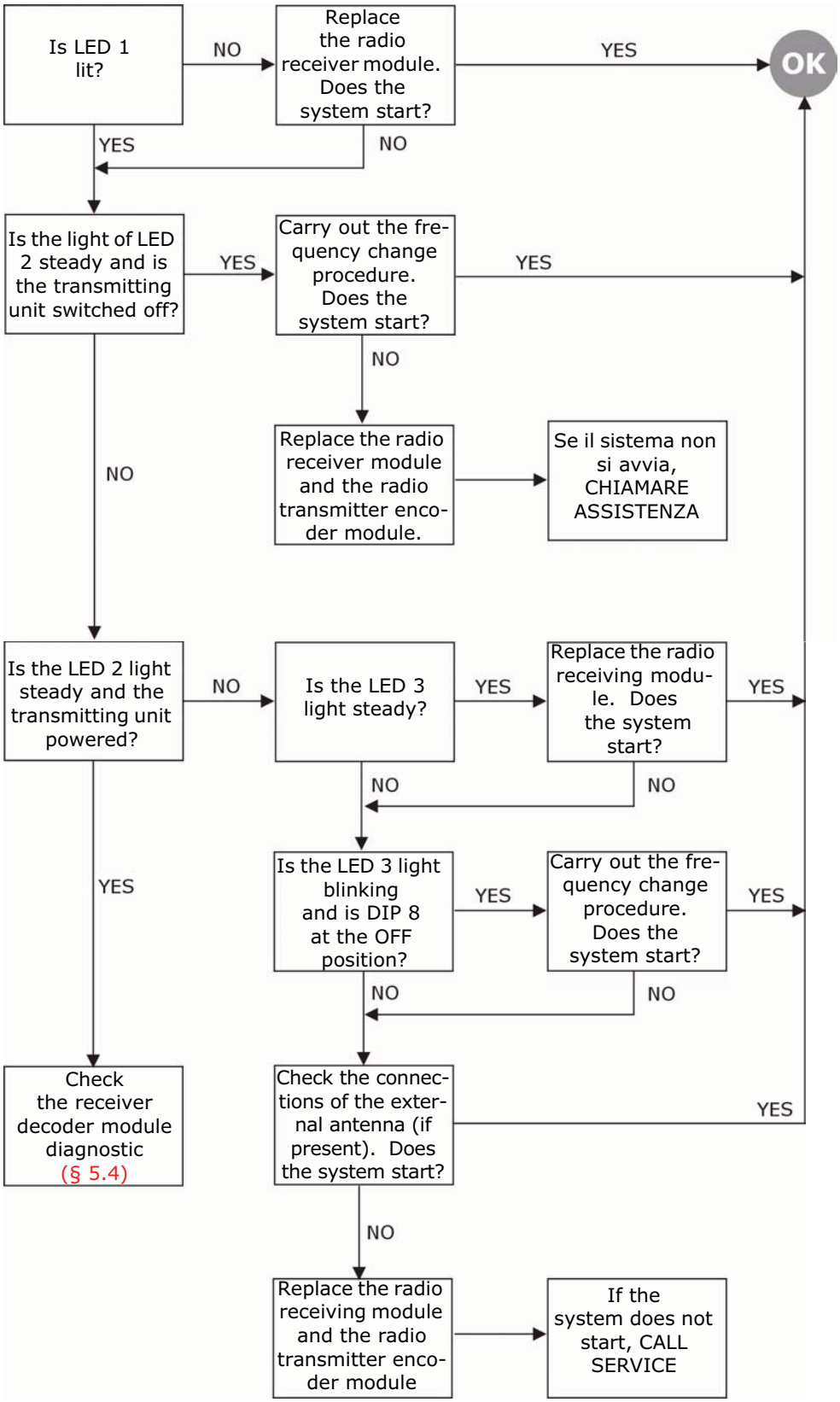
Dip switches

The eight dip switches present in the radio receiving module define the frequency operation mode (automatic scan or manual selection) and the operating frequency itself: :



The radio receiving module dip switches must always be set in the same manner as the dip switches of the radio transmitter encoder module.

Diagnostic

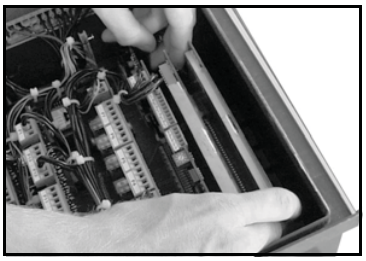

Is LED 1 lit?
NO
Replace the radio receiver module. Does the system start?
YES
OK
YES
NO
Is the light of LED 2 steady and is the transmitting unit switched off?
YES
Carry out the frequency change procedure. Does the system start?
YES
NO
Replace the radio receiver module and the radio transmitter encoder module.
Se il sistema non si avvia, CHIAMARE ASSISTENZA
NO
Is the LED 2 light steady and the transmitting unit powered?
NO
Is the LED 3 light steady?
YES
Replace the radio receiving module. Does the system start?
YES
NO
NO
YES
Is the LED 3 light blinking and is DIP 8 at the OFF position?
YES
Carry out the frequency change procedure. Does the system start?
YES
NO
NO
Check the receiver decoder module diagnostic (§ 5.4)
Check the connections of the external antenna (if present). Does the system start?
YES
NO
Replace the radio receiving module and the radio transmitter encoder module
If the system does not start, CALL SERVICE

Replacement

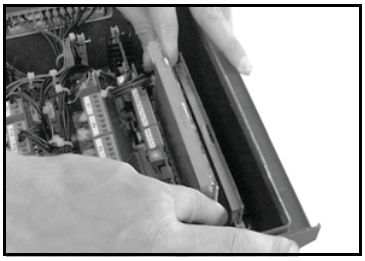
Disassembly

1.
Open the receiving unit by rotating the plastic key in a clockwise direction.

2.
Release the module, pressing the metal discs on the two electronic card guides on the second slot from the left.



3.
Extract the radio receiver module.



Assembly

4.
After having set the dip switches, insert the new radio receiver module into the two card guides.

5.
Lock the module by pressing the two black pins on the card guides.

6.
Close the receiving unit by turning the plastic key in an anti-clockwise direction.

Automatic scan mode

For this type of mode it is necessary to:
1) set DIP8 at OFF
2) select the requested frequency group by setting the eight dip switches for each module as explained in the following tables:

MTXEU03A

	Group 1	Group 2	Group 3	Group 4
Position DIP 2, 3 e 4	OFF, OFF, OFF	ON, OFF, OFF	OFF, ON, OFF	ON, ON, OFF
Freq. 1	433.100 MHz	433.125 MHz	433.150 MHz	433.175 MHz
Freq. 2	433.300 MHz	433.325 MHz	433.350 MHz	433.375 MHz
Freq. 3	433.500 MHz	433.525 MHz	433.550 MHz	433.575 MHz
Freq. 4	433.700 MHz	433.725 MHz	433.750 MHz	433.775 MHz
Freq. 5	433.900 MHz	433.925 MHz	433.950 MHz	433.975 MHz
Freq. 6	434.100 MHz	434.125 MHz	434.150 MHz	434.175 MHz
Freq. 7	434.300 MHz	434.325 MHz	434.350 MHz	434.375 MHz
Freq. 8	434.500 MHz	434.525 MHz	434.550 MHz	434.575 MHz

	Group 5	Group 6	Group 7	Group 8
Position DIP 2, 3 e 4	OFF, OFF, ON	ON, OFF, ON	OFF, ON, ON	ON, ON, ON
Freq. 1	433.200 MHz	433.225 MHz	433.250 MHz	433.275 MHz
Freq. 2	433.400 MHz	433.425MHz	433.450 MHz	433.475 MHz
Freq. 3	433.600 MHz	433.625MHz	433.650 MHz	433.675 MHz
Freq. 4	433.800 MHz	433.825 MHz	433.850 MHz	433.875 MHz
Freq. 5	434.000 MHz	434.025 MHz	434.050 MHz	434.075 MHz
Freq. 6	434.200 MHz	434.225 MHz	434.250 MHz	434.275 MHz
Freq. 7	434.400 MHz	434.425 MHz	434.450 MHz	434.475 MHz
Freq. 8	434.600 MHz	434.625 MHz	434.650 MHz	434.675 MHz

In this module, DIPs 5, 6 and 7 do not effect the setting of the frequency group while DIP 1 must be set to OFF.

The available frequencies are those belonging to the set group

MTXUK03A

In this module, the DIPs from 2 to 7 are inactive and do not influence in the choice of the frequency group, while DIP 1 must be set at OFF.

MTXEU06B

In this module, the DIPs from 2 to 7 are inactive and do not influence in the choice of the frequency group, while DIP 1 must be set at ON.

MTXAU03A

In this module the DIPs from 2 to 7 must be set in order to operate within the permitted frequencies:.

DIP 1	OFF
DIP 2	ON
DIP 3	OFF
DIP 4	OFF
DIP 5	ON
DIP 6	OFF
DIP 7	ON
DIP 8	OFF

Manual frequency mode

For this type of mode it is necessary to:
1) set DIP8 at ON
2) select the frequency by setting the DIPs from 2 to 7 as explained below as a function of the radio transmitter encoder module:

MRXEU03A

Frequenza (MHz)	Dip switch							Frequenza (MHz)	Dip switch						
	1	2	3	4	5	6	7		1	2	3	4	5	6	7
433.100	OFF	OFF	OFF	OFF	OFF	OFF	OFF	433.500	OFF	OFF	OFF	OFF	OFF	ON	OFF
433.125	OFF	ON	OFF	OFF	OFF	OFF	OFF	433.525	OFF	ON	OFF	OFF	OFF	ON	OFF
433.150	OFF	OFF	ON	OFF	OFF	OFF	OFF	433.550	OFF	OFF	ON	OFF	OFF	ON	OFF
433.175	OFF	ON	ON	OFF	OFF	OFF	OFF	433.575	OFF	ON	ON	OFF	OFF	ON	OFF
433.200	OFF	OFF	OFF	ON	OFF	OFF	OFF	433.600	OFF	OFF	OFF	ON	OFF	ON	OFF
433.225	OFF	ON	OFF	ON	OFF	OFF	OFF	433.625	OFF	ON	OFF	ON	OFF	ON	OFF
433.250	OFF	OFF	ON	ON	OFF	OFF	OFF	433.650	OFF	OFF	ON	ON	OFF	ON	OFF
433.275	OFF	ON	ON	ON	OFF	OFF	OFF	433.675	OFF	ON	ON	ON	OFF	ON	OFF
433.300	OFF	OFF	OFF	OFF	ON	OFF	OFF	433.700	OFF	OFF	OFF	OFF	ON	ON	OFF
433.325	OFF	ON	OFF	OFF	ON	OFF	OFF	433.725	OFF	ON	OFF	OFF	ON	ON	OFF
433.350	OFF	OFF	ON	OFF	ON	OFF	OFF	433.750	OFF	OFF	ON	OFF	ON	ON	OFF
433.375	OFF	ON	ON	OFF	ON	OFF	OFF	433.775	OFF	ON	ON	OFF	ON	ON	OFF
433.400	OFF	OFF	OFF	ON	ON	OFF	OFF	433.800	OFF	OFF	OFF	ON	ON	ON	OFF
433.425	OFF	ON	OFF	ON	ON	OFF	OFF	433.825	OFF	ON	OFF	ON	ON	ON	OFF
433.450	OFF	OFF	ON	ON	ON	OFF	OFF	433.850	OFF	OFF	ON	ON	ON	ON	OFF
433.475	OFF	ON	ON	ON	ON	OFF	OFF	433.875	OFF	ON	ON	ON	ON	ON	OFF

Frequenza (MHz)	Dip switch							Frequenza (MHz)	Dip switch						
	1	2	3	4	5	6	7		1	2	3	4	5	6	7
433.900	OFF	OFF	OFF	OFF	OFF	OFF	ON	434.300	OFF	OFF	OFF	OFF	OFF	ON	ON
433.925	OFF	ON	OFF	OFF	OFF	OFF	ON	434.325	OFF	ON	OFF	OFF	OFF	ON	ON
433.950	OFF	OFF	ON	OFF	OFF	OFF	ON	434.350	OFF	OFF	ON	OFF	OFF	ON	ON
433.975	OFF	ON	ON	OFF	OFF	OFF	ON	434.375	OFF	ON	ON	OFF	OFF	ON	ON
434.000	OFF	OFF	OFF	ON	OFF	OFF	ON	434.200	OFF	OFF	OFF	ON	OFF	ON	ON
434.025	OFF	ON	OFF	ON	OFF	OFF	ON	434.425	OFF	ON	OFF	ON	OFF	ON	ON
434.050	OFF	OFF	ON	ON	OFF	OFF	ON	434.450	OFF	OFF	ON	ON	OFF	ON	ON
434.075	OFF	ON	ON	ON	OFF	OFF	ON	434.475	OFF	ON	ON	ON	OFF	ON	ON
434.100	OFF	OFF	OFF	OFF	ON	OFF	ON	434.500	OFF	OFF	OFF	OFF	ON	ON	ON
434.125	OFF	ON	OFF	OFF	ON	OFF	ON	434.525	OFF	ON	OFF	OFF	ON	ON	ON
434.150	OFF	OFF	ON	OFF	ON	OFF	ON	434.550	OFF	OFF	ON	OFF	ON	ON	ON
434.175	OFF	ON	ON	OFF	ON	OFF	ON	434.575	OFF	ON	ON	OFF	ON	ON	ON
434.200	OFF	OFF	OFF	ON	ON	OFF	ON	434.600	OFF	OFF	OFF	ON	ON	ON	ON
434.225	OFF	ON	OFF	ON	ON	OFF	ON	434.625	OFF	ON	OFF	ON	ON	ON	ON
434.250	OFF	OFF	ON	ON	ON	OFF	ON	434.650	OFF	OFF	ON	ON	ON	ON	ON
434.275	OFF	ON	ON	ON	ON	OFF	ON	434.675	OFF	ON	ON	ON	ON	ON	ON

MRXUK03A

Frequenza (MHz)	Dip switch						
	1	2	3	4	5	6	7
458.525	OFF	ON	OFF	OFF	OFF	OFF	ON
458.550	OFF	OFF	ON	OFF	OFF	OFF	ON
458.575	OFF	ON	ON	OFF	OFF	OFF	ON
458.600	OFF	OFF	OFF	ON	OFF	OFF	ON
458.625	OFF	ON	OFF	ON	OFF	OFF	ON
458.650	OFF	OFF	ON	ON	OFF	OFF	ON
458.675	OFF	ON	ON	ON	OFF	OFF	ON
458.700	OFF	OFF	OFF	OFF	ON	OFF	ON
458.725	OFF	ON	OFF	OFF	ON	OFF	ON
458.750	OFF	OFF	ON	OFF	ON	OFF	ON
458.775	OFF	ON	ON	OFF	ON	OFF	ON

The DIPs that are present make it possible to set other frequencies (see Dip switches page 8) which are not, however, permitted.

MRXEU06B

Frequenza (MHz)	Dip switch						
	1	2	3	4	5	6	7
869.7125	ON	OFF	OFF	ON	OFF	ON	ON
869.7375	ON	ON	OFF	ON	OFF	ON	ON
869.7625	ON	OFF	ON	ON	OFF	ON	ON
869.7875	ON	ON	ON	ON	OFF	ON	ON
869.8125	ON	OFF	OFF	OFF	ON	ON	ON
869.8375	ON	ON	OFF	OFF	ON	ON	ON
869.8625	ON	OFF	ON	OFF	ON	ON	ON
869.8875	ON	ON	ON	OFF	ON	ON	ON
869.9125	ON	OFF	OFF	ON	ON	ON	ON
869.9375	ON	ON	OFF	ON	ON	ON	ON
869.9625	ON	OFF	ON	ON	ON	ON	ON
869.9875	ON	ON	ON	ON	ON	ON	ON

The DIPs that are present make it possible to set other frequencies (see Dip switches page 8) which are not, however, permitted.

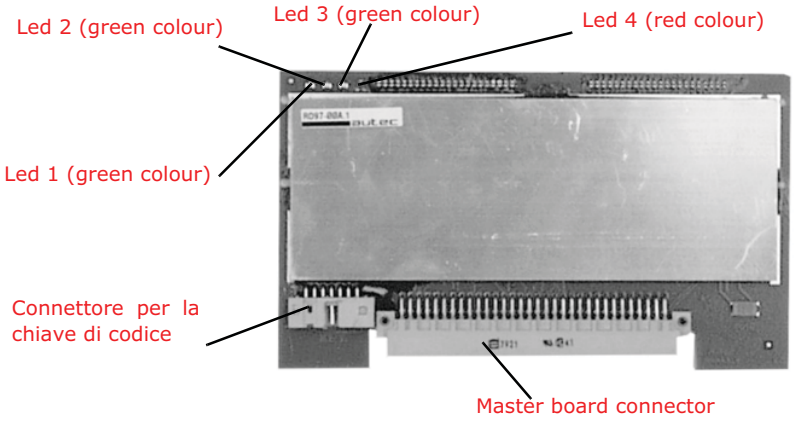
MRXAU03A

Frequenza (MHz)	Dip switch						
	1	2	3	4	5	6	7
472.025	OFF	ON	OFF	OFF	ON	OFF	ON
472.050	OFF	OFF	ON	OFF	ON	OFF	ON
472.075	OFF	ON	ON	OFF	ON	OFF	ON
472.100	OFF	OFF	OFF	ON	ON	OFF	ON

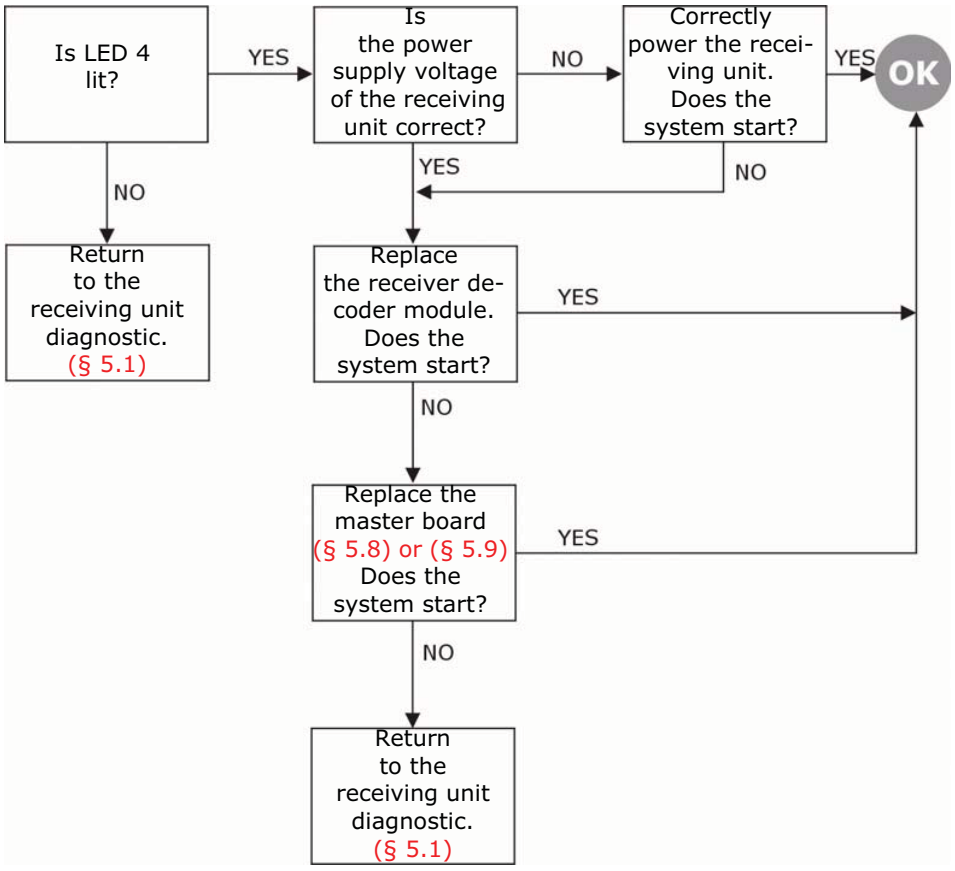
The DIPs that are present make it possible to set other frequencies (see Dip switches page 8) which are not, however, permitted.

5.4 Receiver decoder module (RD97-00A)

Module components



Diagnostic



Leds

The four LEDs present on the receiver decoder module indicate:
LED 1 (green)
ON : module being powered correctly with a steady voltage of between 9 and 15 Vdc
OFF: module being powered incorrectly
LEDs 2 and 3 (green)
ON: module operating correctly

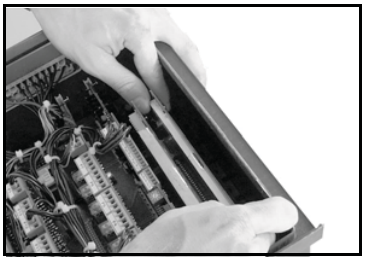
OFF: module not operating correctly
These two LEDs must blink during the test phase after power on and before true operation.
LED 4 (red)
ON: the module is signalling the presence of a fault in the system
OFF: the module is operating correctly

Replacement

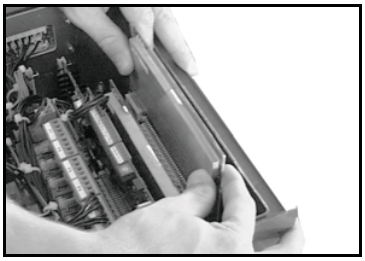
Disassembly

1.
Open the receiving unit by rotating the plastic key in a clockwise direction.

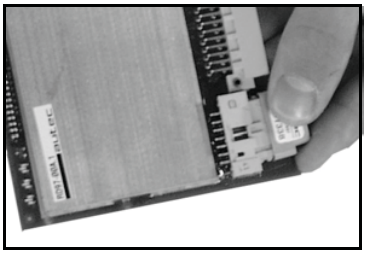
2.
Release the module, pressing the metal discs on the two electronic card guides on the first slot from the left.



3.
Extract the receiver decoder module.



4.
Extract the address key from the receiver decoder module.



Assembly

8.
Close the receiving unit by turning the plastic key in an anti-clockwise direction.

7.
Lock the module by pressing the two black pins on the card guides.

6.
Insert the new receiver decoder module into the two card guides.

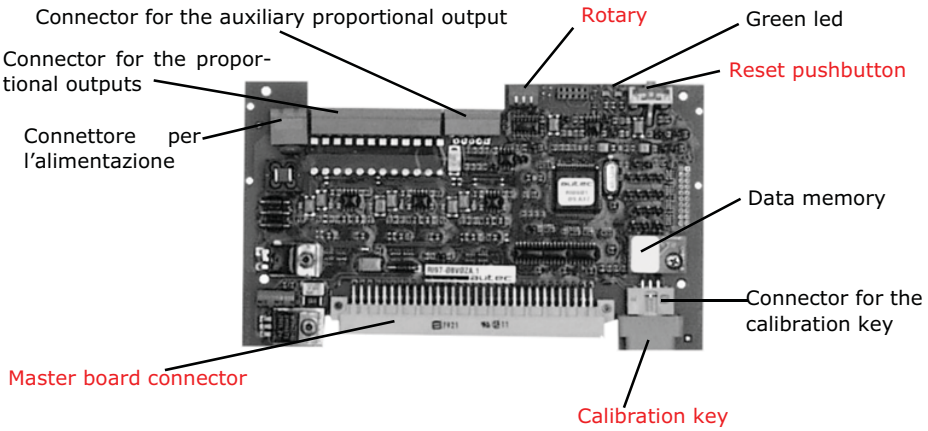
5.
Insert the address key in the new receiver decoder module.

5.5 Analogue receiver module (RI97-08_0ZA)

Codes

RI97-08V0ZA	Analogue receiver module with voltage outputs
RI97-08P0ZA	Analogue receiver module with PWM outputs

Module components



Information about module

1) Never leave the K1 calibration key inserted during radio remote control use. The key is only needed during the calibration phase and, when inserted, only one proportional command can be activated at a time.

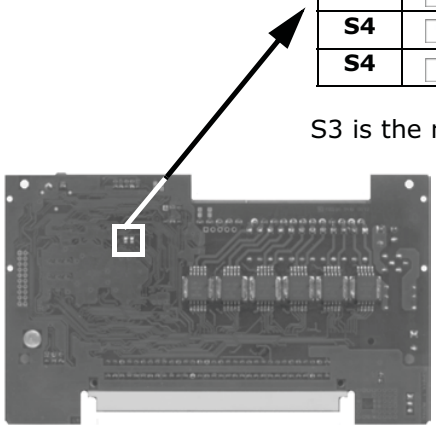
2) The proportional outputs of RI97-08____ module are programmed at the values given on the relevant technical data sheet.

3) To keep the same settings in case of module replacement, move the K2 memory from the old module to the new one.

Welding points

Some welding points are present on the analogue receiver module:

PAD	STATE	DESCRIPTION
S3		stabilised voltage
S3		in step voltage
S4		RI97-08P0ZA configuration
S4		RI97-08V0ZA configuration



S3 is the right-hand welding point, S4 the left one

The S4 welding point must be closed in RI97-08P0ZA modules, while it must be open in the RI97-08V0ZA module.

To set S3 please keep in mind the following:

Stabilised voltage: the voltage of the module outputs are always related to an absolute voltage value.

In step voltage: the module output voltages are related to the true power supply values.

PAD	STATE	DESCRIPTION
S1		RI97-08V0ZA configuration
S1		RI97-08P0ZA configuration

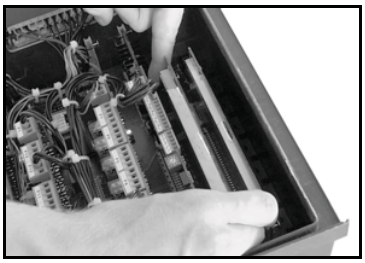
The S1 setting can at times be different from what is indicated above. Check the current setting given in the technical data sheet, and during replacement verify that the new module is set in the same manner as the one to be replaced.

Replacement

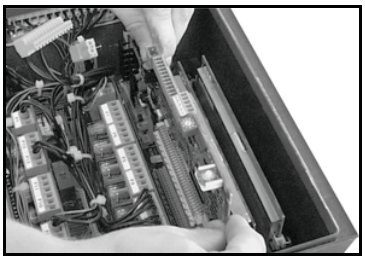
Disassembly

1.
Open the receiving unit by rotating the plastic key in a clockwise direction.

2.
Release the module, pressing the metal discs on the two electronic card guides on the third slot from the left.



3.
Remove the wiring connectors from the analogue receiver module. Extract the module.



Assembly

4.
Insert the new analogue receiver module into the two card guides. Insert the wiring into the respective connectors.

5.
Lock the module by pressing the two black pins on the card guides.

6.
Close the receiving unit by turning the plastic key in an anti-clockwise direction.