CARDIN ELETTRONICA spa

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CARDIN
ELETTRONICA

CODE Nr.	SERIES	MODEL	DATE
ZVL379.00	S435	RXPR	20-10-2000

This product has been tried and tested in the manufacturer's laboratory, during the installation of the product follow the supplied indications carefully.

DIGITAL RADIOPROGRAMMER WITH DYNAMIC CODES S435

Description
The **S435** radioprogramming system consists of one or more transmitters and one or more receivers which can be combined to meet the specific needs of the system.
The **S435** system uses a highly reliable encoding system guaranteed by the use of dynamic codes. The code is changed for each encoding transmission through the use of an encoding algorithm which only the receiver is able to recognise and therefore decide whether or not the code transmitted corresponds to the original code. The code is generated for each channel in the transmitter using the random arbitrary method with **236** combinations. The generated code is memorised in the receiver via radio. The receiver is able to memorise up to **24** different codes. During the transfer stage the codes are memorised in a non volatile memory module which can be moved to another receiver without having to reprogram it. As this is a system based on dynamic codes each code is processed individually by the receiver.

Important
Disturbance during the transmission will disactivate the relay, at this point the relay can only be activated by first releasing and then pressing the transmitter channel button a second time.

Use
The radioprogrammer is best used in systems controlling automatic rolling shutters and allows the remote activation of a single phase **115Vac 350W** motor using dynamic commands Open-Stop-Close-Stop or the same commands by cable. During the code memorisation phase the channel can be associated (using the Dipswitch **SW1**) with one of the following functions: stop command only; open command only or sequential dynamic commands "Open-Stop-Close-Stop". This allows you to either control one motor or more than one motor contemporaneously using one channel for the complete opening command, one channel for the complete closing command and one channel for the single movement command.

Transmitter versions
TRS435200.0US	Miniaturised transmitters	2 Buttons
TRS435400.0US	Miniaturised transmitters	4 Buttons
TRS435120.0US	Miniaturised transmitters with switch (12 channels)	4 Buttons
TRS43540M.0US	Wall mounted transmitters	4 buttons

Receiver version
RPS435000.0US Radioprogrammer

Memory module
This is extractable, furnished with a non volatile EEPROM type memory and contains the system codes. The programmed code is maintained in this module even in the absence of power. This component can be ordered as an accessory with s.p.n. code: **MCC46320**

Receiver antenna installation
Minimum and maximum range of the radio controls. 'Range' is intended to mean the working distance, measured in free space, between the receiver and the transmitter with the antenna installed. The range is therefore closely linked to the technical characteristics of the system (power and sensibility) and varies according to the characteristics of the site in which the system is located. To obtain the best results from the device the installation sites for the receiver and the antenna should be carefully chosen.
It is not possible to install 2 receivers at a distance of less than **1.5 m.** from each other.

It is good practise to position the receiver away from computer systems, alarm systems and other possible sources of disturbance. (**A bad choice of positioning could compromise the correct performance of the receiver**).

Antenna
The installation of the antenna is fundamental, connected to the receiver it represents the reception point for the radio control. When installing the antenna consider the following points: The receiver is supplied with its own antenna which consists of a piece of rigid wire **170 mm** in length. In alternative it is possible to connect an **ANS400** tuned antenna using a coaxial cable **RG58** (impedance 50Ω) with a maximum length of **15 m**. The antenna should be positioned out of doors in the highest possible point, visible and away from metal structures.

Receiver
The receiver is installed using "fast-fitting" brackets. The bracket should be fixed to the wall using two raw plugs (check that it is square to the wall), the case can be then slid onto the bracket therefore fixing it to the wall. The slot-in circuit located towards the bottom of the case can be easily extracted to facilitate wiring up the device. If any repair work is necessary the case can be easily extracted by pushing upwards the action of which will separate it from the bracket.

Electrical connection (fig.9)
Before connecting the device to the mains make sure that:
- the voltage and frequency rated on the data plate conform to those of the mains supply;
- an omnipolar circuit breaker which leaves at least **3mm** between the contacts has been installed between the device and the mains;
- the high voltage **115V** wires pass through the holes marked "**A**" and are routed separately from the low voltage **24V** wires which pass through the holes marked "**B**";
- the wires are fastened down using a cable clamp;
- once the wiring is complete the holes through which the wires have passed have been sealed using silicon;
- the holes which are not used are blocked by inserting the caps "**D**".
- the appliance must be earthed, to this end use the binding post marked with the symbol ⊕ which can be found on the wiring box.

Terminal board connections (fig. 9)
1-2 Earth connection
3-4 Radioprogrammer power supply **115Vac 50-60Hz**.
5-6-7 Motor control in output "Open-Close-Common" **350W**.
8 -9 N.C. input for safety devices with travel direction inversion during the closing cycle. If you connect a pair of photocells an external power circuit will be required.

10-11 Dynamic button in input (contact N.O.) with Open-Stop-Close-Stop functions
12 Antenna ground.
13 Antenna connection **17cm** rigid wire (as an alternative it is possible to connect an **ANS400** antenna using a coaxial cable RG58 (imp. 50Ω) with a maximum length of 15m).

Settings (fig. 9)
TL Work cycle regulation trimmer (15…80 secs).
The timer countdown starts after an opening or closing command has been received and is set to zero after the preset work cycle time has expired. It cannot be set while the motor is in movement.
PW Power on LED
F1 Fuse **4A** delayed

Generating the user code in the transmitters (fig. 1-6)
• Once the container has been opened (see fig.7) the programming procedure for the wall mounted transmitter is the same as for the hand held transmitter (the circuit is the same).
1) Open the access door (fig.1)
2) For the version equipped with a channel block selection switch choose the desired block of channels by moving the switch ("**Y1**" fig.1,2)
 Y1 in position "**1**" = A,B,C,D
 Y1 in position "**2**" = E,F,G,H
 Y1 in position "**3**" = I,L,M,N
3) Press the button "**J1**" (fig.3)
4) While keeping button "**J1**" pressed down press the button "**CH**" corresponding to the required channel which is to be memorised. Led "**L1**" will start to flash (fig.4).
5) Release the channel button "**CH**" and the led will carry on flashing (fig.5).
6) Release the button "**J1**", the led will turn off and the transmitter will memorise the last code which was transmitted (fig.6).
7) Repeat points 3-4-5-6 for any successive channels
8) To memorise another block of channels move the switch ("**Y1**" fig.2) to the required position and repeat the operations 3-4-5-6.
 If a code is not generated it could be due to the fact that the memory is empty and it is therefore impossible to transfer the code to the receiver.

Generating the user code in the receiver (fig.9)

Attention! Before memorising the transmitters for the first time remember to cancel the entire memory content.

Dipswitch SW1 functions

 DIP1-DIP2 OFF
Code memorisation is not possible

 DIP1 ON/ DIP2 OFF
The memorised code is associated with the opening command

 DIP1 OFF/ DIP2 ON
The memorised code is associated with the closing command

 DIP1 ON/ DIP2 ON
The memorised code is associated with the dynamic function Open-Stop-Close-Stop

Memorising the user code in the receiver
1) Using dipswitch "**SW1**" select the function to be associated with the channel
2) Keep button "**P1**" pressed down and the led "**LD**" will start to flash
3) Transmit the channel which is to be memorised, the led will flash rapidly and the channel will be memorised. Only one code can be inserted at a time. To insert successive codes repeat steps 2 and 3.
- When you have finished memorising the codes remember to replace dips 1-2 in the off position on "**SW1**".
 If the code is not memorised it could be due to the following:
- The memory is full (24 codes already memorised) and the led remains lit. If this is the case you can only insert a new code after you have first cancelled an existing one or after wiping the entire memory (see memory cancelling procedure);
- The code may already exist in memory.
- You have not generated a channel code in the transmitter.

Memory cancelling procedure:
1) Keep the button "**P2**" pressed down and the led "**LD**" will flash slowly.
2) Transmit the channel which is to be cancelled for at least 3 seconds until the led starts to flash quickly then repeat points 1 and 2 for any successive channels.

To wipe all the codes from memory:
3) Keep buttons "**P1**" and "**P2**" pressed down simultaneously for at least 5 seconds until the led "**LD**" flashes rapidly .

Receivers
The receiver can decode up to 12 different channels in blocks of 3 (A,B,C,D - E,F,G,H - I,L,M,N.) without a selection.
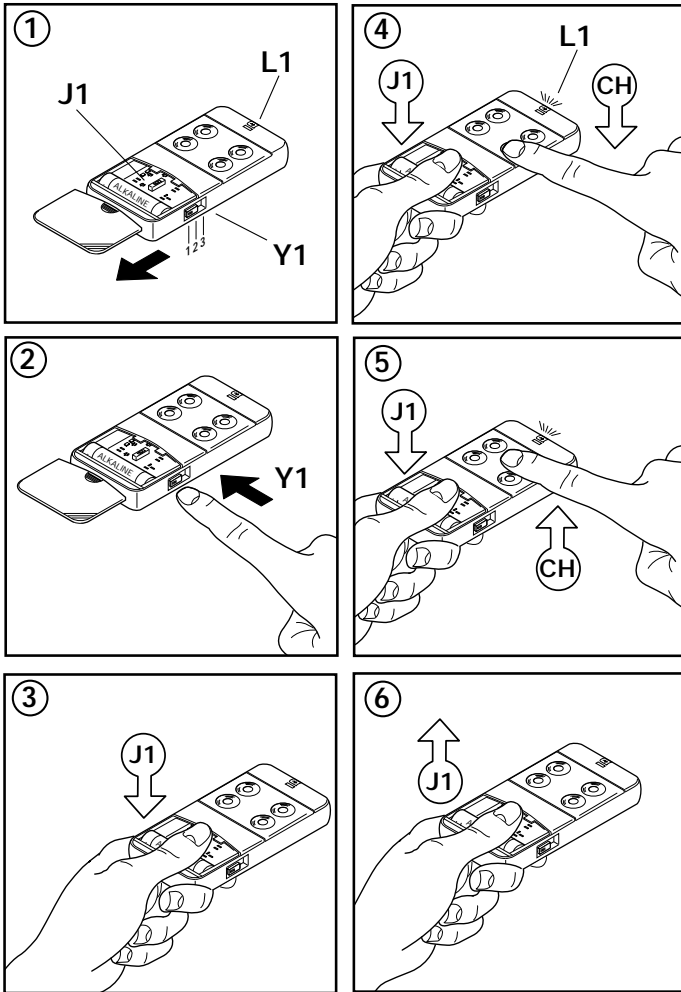
TECHNICAL SPECIFICATIONS

RECEIVER
- reception frequency .... 433,92 MHz
- local oscillation emission .... <-57dBm (<2nW)
- antenna impedance in input 50Ω
- sensitivity (finely tuned signal) .... 1 µV
- power supply .... 115Vac 50-60 Hz
- operating temperature range .... -20°…+60°C

TRANSMITTERS
- carrier frequency .... 433.92 MHz
- carrier frequency tolerance .... ±75 kHz
- band width .... >25 kHz
- modulation .... AM/ASK
- power supply (alkaline battery GP23A) .... 12V ± 10%
- maximum power consumption .... 25 mA
- operating temperature range .... - 10…+55°C

MOD:20-10-2000

GENERATING THE TRANSMITTER CODE

① J1 L1 Y1 1 2 3

② Y1

③ J1

④ L1 J1 CH

⑤ J1 CH

⑥ J1

BATTERY REPLACEMENT

J1

7

EXTERNAL DIMENSIONS

80 39 12 20 82 82 116 138 45

8
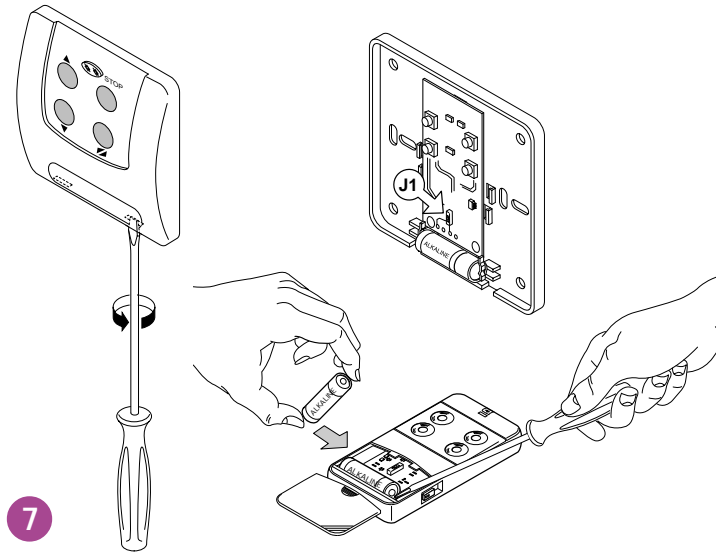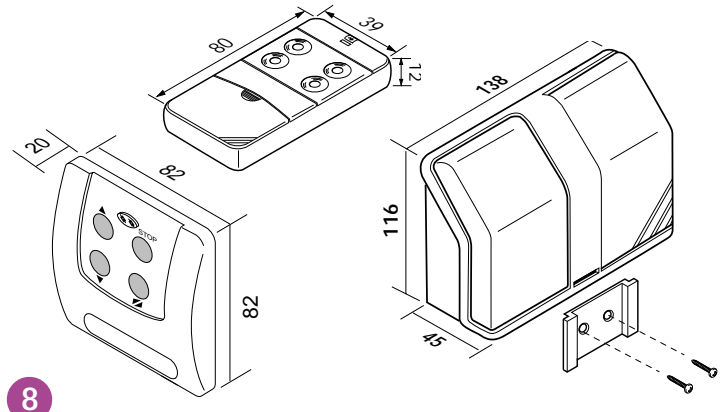
RADIOPROGRAMMER ELECTRICAL CONNECTION

9

C A B D

M1

P1 P2

PW

SW1 ON 1 2 LD

LD

- TL +

FUSE 3.15A F1

DC0225 CS951

3 4 5 6 7
N 220/230V~ F AP c M CH COM

8 9 10 11 12 13
FTC TD

F1: Fuse type

Current	T3,15A
Code	MT785231
I2t	A2S 60
Voltage drop mV	100

8,4 4,3
8,4

Antenna filo rigido 17cm
17 cm rigid wire antenna
Antenne fil rigide 17 cm
Starres Antennen Kabel 17 cm
Antena cable rigido 17 cm.
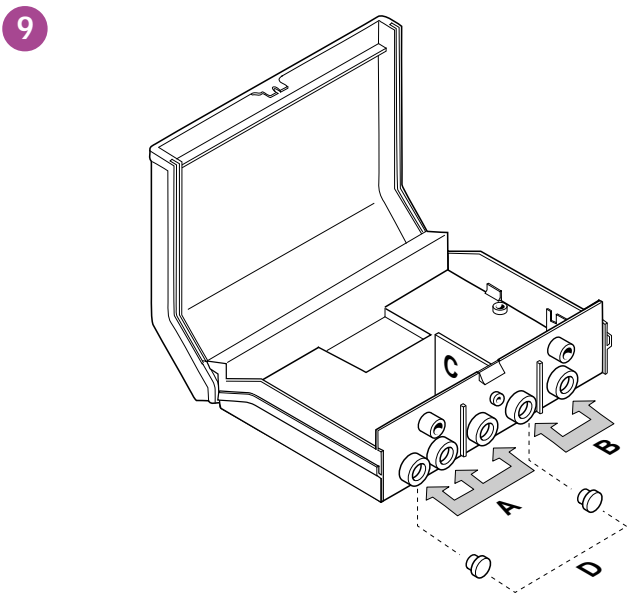
Legend

A: Entry holes for 110V~ mains wiring
B: Entry holes for low voltage 12/24V wiring + antenna
C: Separator wall
D: Hole sealing plugs
LD: Signal led
M1: Memory module
P1: Memorising button
P2: Delete button
PW: Power on led
SW1: Function selection dip
TL: Work cycle setting trimmer