

## 1.0 INTRODUCTION

### **Manufacturer's data**

CARDIN ELETTRONICA SPA  
VIA RAFFAELLO 36  
31020 S. VENDEMIANO (TV)  
ITALY

Tel. +39-0438-401818  
Fax. +39-0438-401831

### **Product marketing and commercial name**

**S435 RADIO CONTROL** (operating frequency: 433.92 MHz) consists of the following equipments:

- |   |                |
|---|----------------|
| - miniaturized transmitter 2 channels (TX2)   | TRS435 200.0US |
| - miniaturized transmitter 4 channels (TX4)   | TRS435 400.0US |
| - wall mounted transmitter 4 channels (TX4M)  | TRS435 40M.0US |
| - miniaturized transmitter 12 channels (TX12) | TRS435 120.0US |

Note: the transmitter versions only differ from one and other by the number of functions (channels) which they are able to activate from a distance.

The various containers differ from one and other by the number of buttons which depend on the model; it's necessary remember that the four and twelve-channel transmitters use the same box but the twelve-channel transmitters has a selector to address the first, the second and the third channel bank.

By looking at the wiring diagram it can be seen that all the transmitters feature the same radio frequency section and that only the encode section differs, due to the number of channel functions.

- |                                      |                |
|--------------------------------------|----------------|
| - two-channel mini receiver (RXM2CH) | RMS435 200.0US |
| - one-channel mini receiver (RXM1CH) | RMS435 100.0US |
| - 120V radio programmer (RXPR)       | RPS435 000.0US |

Note1: the RF part in the 120V radio programmer is represented by the YRFIBR-433 module.

### **Technical report drawn up by:**

Ing. M. Terruso  
Resp. Certif. & Omologhe – Cardin Elettronica S.p.A.

## **2.0 GENERAL DESCRIPTION**

- Radio control system model S435 consisting of one or more transmitters and one or more receivers;
- Carrier frequency in the UHF waveband controlled by a SAW RESONATOR;
- PCM type encoding signal transmitted in modulation bandwidth ASK;
- Superheterodyne receiver, single conversion with local oscillator SAW, low rumor RF preamplifier and integrated RF-IF section;
- Encoding and decoding device using a highly reliable 49 bit custom LSI, code transmission with complementary parity, automatic pre-chosen channel selection;
- 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 recognize 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  $2^{36}$  combinations. The generated code is memorized in the receiver via radio. The receiver is able to memorize 32 or 128 or 512 different codes.

## **2.1 USE AND APPLICATIONS**

The Radio control model S435 permits the remote activation of electrical and electronic appliances and has its best use in the following areas:

- Automatic opening systems
- Alarm systems

and in all systems which require remote activation (without wires) using secret user codes in compliance with the local safety standards in force.

### 3.0 PRODUCT DESCRIPTION

- **120V radioprogrammer (with container)**

- External casing in ABS (overall dimensions 115 x 139 x 44mm)
- Electronic circuit with the slot-in receiver card YRFIBR-433 and motor control in output
- Power supply: 110-120 V ac

**PRODUCT DESCRIPTION**  
**Radioprogrammer**

**CODE**  
**RPS435 000.0US**

- **RF module YRFIBR\_433**

- Only radio frequency part
- Band width in Low frequency 2400 Hz.
- Slot-in receiver decoded outputs with logical level 5V. CMOS
- Circuit board dimensions 50 x 20 mm
- Electronic p.c.b. card with an 8-way pin connector to be inserted in to devices suited to its application
- Power supply: 5 V. dc

**PRODUCT DESCRIPTION**  
**RF module YRFIBR-433**

**CODE**  
**YRF433IBR0CE**

- **Mini receiver (with container)**

- One and two channel mini receivers (external dimensions 20x60x90 mm.)
- For internal use the device features an easily accessible terminal block and channel selection on the card
- Power supply: 12-24V ac/dc
- Up to 32 codes

**PRODUCT DESCRIPTION**  
**2 channel mini receiver**  
**1 channel mini receiver**

**CODE**  
**RMS435 200.0US**  
**RMS435 100.0US**

- **Miniaturized transmitters**

- Shock-proof container
- Overall dimensions 80 x 39 x 12 mm
- Led indicating signal emission
- Access door permitting battery replacement and user code programming
- Power supply: pencil battery 12V (model GP23A)
- Versions with up to 12 channels
- $2^{36}$  random code combinations with dynamic code transmission

**PRODUCT DESCRIPTION**

**Miniaturized 2-channel transmitter**

**Miniaturized 4-channel transmitter**

**Wall mounted transmitter 4-channel**

**Miniaturized 12-channel transmitter**

**CODE**

**TRS435 200.0US**

**TRS435 400.0US**

**TRS435 40M.0US**

**TRS435 120.0US**