433 MHz WIEGAND RECEIVER

MANUAL

Transmitter SOLUTIONS®
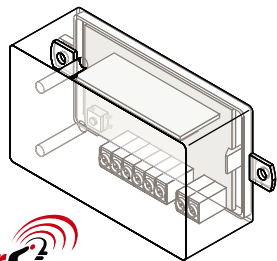
with
ADJUSTABLE RANGE

Thank you for choosing a Transmitter Solutions product. Please read this manual carefully before using the product.

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CONTENTS

1- RECEIVER INTRODUCTION

1A- Description

Transmitter Solutions receiver RECTSWEI433 is a superheterodyne receiver operating at the frequency 433 Mhz in AM/ASK The two outputs have an open drain configuration with output signal in "Wiegand 26 bit format"
The appliance is housed in an indoor enclosure
The sensitivity can be adjusted with a trimmer .

1B - Technical specifications

Receiver type:	Superheterodyne.
Demodulation:	AM/ASK
Operating frequency:	433.92 MHz.
Local oscillator frequency:	6.6128 MHz.
Intermediate frequency:	10.7 MHz.
Input Sensitivity:	-40 ÷ -80 dBm.
Input load:	50 Ohm
Power supply :	12 / 24 VAC/DC
Current consumption:	24 mA
Range (with wire antenna)	0 ÷ 80 m
Output type:	Wiegand.
Max output current:	250 mA
Operating temperature:	-20°/ + 70°C.
Overall dimensions:	4.13 x 1.77 x 1.1 in
Weight:	65 gr.
Housing protection:	IP2X

4.13 in
1.77 in
1.1 in

RECTSWEI433
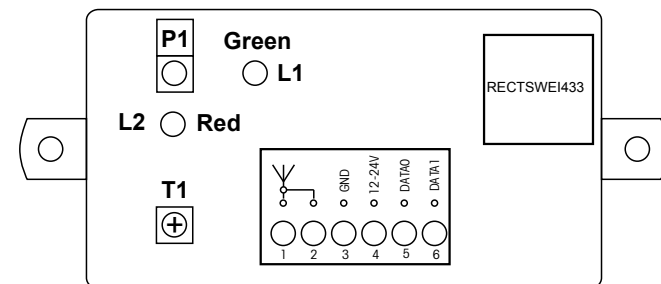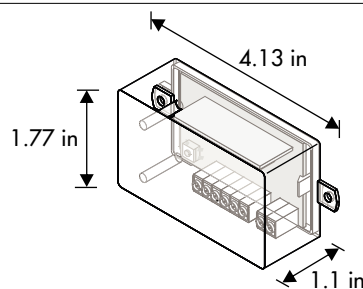
1C - Receiver Layout

P1 : Programming button
L2 : Red led (programming)
L1 : Green led (power supply)
T1 : Trimmer for sensitivity adjustment

1D- Terminal board connections

1- Antenna Core;
2- Antenna Shield;
3- Power GND;
4- Power Supply (12 ÷ 24 Vac/dd);
5- Output DATA0 (Open collector);
6- Output DATA1 (Open collector);

1E - Sensitivity adjustment

Adjust the sensitivity with the trimmer T1

Low Sensitivity   High Sensitivity

⚠️ **IMPORTANT**

The receiver allocation is very important for the best operation of the system. Place the receiver far from interference sources such as big magnetic fields or radio emissions.
The installation and the positioning of the antenna is very important as well. Before to install the antenna it is advisable to make some tests on the site. Use shielded cable type RG58 (impedance 50 Ohm) for the antenna connection.

2- FACTORY SETTINGS

The information contained in the frame sent by the transmitter is composed by 4 main parameters: **Manufacturer Key, FACILITY CODE, SERIAL NUMBER and Button type**.

The receiver accepts only transmitters with the right Manufacturer Key (ERONE) and, once initialized, sends out in wiegand format the S/N of the transmitters having the right Facility code /Button type .

No wiegand formatted signal is carried out from the receiver unless a initialization procedure is performed.

Follow the procedure below to create the filter in the receiver memory.

2- RECEIVER SET-UP

Before commencing the procedure make sure that the power led L1 is ON.
The EEPROM of the receiver is capable to store up to 50 different combinations: "Facility code- Button type".
The button type of each transmitter can be A, B, C, D.
Combinations of this type can be, for example:
001-A, 001-B, 002-B, 003- B, 010-D, where 002 is the Facility code and B is the transmitter button and so on.
Combinations as A+B or C+D are not allowed.

Transmitter button A programming
1) Keep the button P1 pressed down until the led L2 turns on and release it.
2) Press the button A of the transmitter which has to be accepted.
3) The led L2 turns off and then make a short flash.

After this operation, the receiver will accept and send out the Facility code and the S/N of all the transmitters with the same Facility code and the same button of the one used for the initialization.
NOTE : in the wiegand signal frame there is no information about the button type (see chapter 8).
See below to get the signal out using more combinations : buttons B, C or D.

Transmitter button B programming
1) Keep the button P1 pressed down until the led L2 turns on and release it.
2) Press the button B of the transmitter which has to be accepted
3) The led L2 turns off and then make a short flash.

Transmitter button C programming
1) Keep the button P1 pressed down until the led L2 turns on and release it.
2) Press the button C of the transmitter which has to be accepted
3) The led L2 turns off and then make a short flash.

Transmitter button D programming
1) Keep the button P1 pressed down until the led L2 turns on and release it.
2) Press the button D of the transmitter which has to be accepted.
3) The led L2 turns off and then make a short flash.

Any operation not allowed (memorization with full memory, memorization of codes already stored) causes a 2 quick flashes of led L2.
A transmitter with wrong manufacturer key is signalled during the memorization with a long flash of L2

4- FACILITY CODE CHECK DISABLING

It is possible to disable the check performed by the receiver on the facility code of the received signal.
At the end of the following procedure, the receiver accepts any facility code and maintains the check on the button code.
This new configuration of the receiver is temporary and can be restored by carrying on the same procedure.

1) Keep the button P1 pressed down until the led L2 turns on and then release it.
2) Within 1 sec. press again P1.
At this point the led L2 start to flash quickly and so the receiver can accept any facility code.
Repeat the phases 1 and 2 to cancel the operation and to recover the initial state.
If a power failure occurs after the phase 2 the new configuration is mantained.

5- VISUALIZATION

- A flash of 1 second of L2 indicates that a correct signal has been received and that the correct frame in wiegand format has been sent from the outputs DATA0 and DATA1.
- If L2 blinks quickly it means that the combination is not memorized (a different button or a different Facility Code)
- A long flash of L2 indicates a transmitter with wrong Manufacturer key

6- MEMORY ERASURE

This procedure allows to erase the memory of the receiver.
1) Keep button P1 pressed down until L2 turns on.
2) Release P1 and then press it again until L2 start to flash 3 times.

At this point the settings stored are cancelled, and the receiver doesn't accept anymore transmitter code, as a new product.

7- WIEGAND SIGNAL FORMAT

The timing of the signals DATA0 and DATA1 are the following:
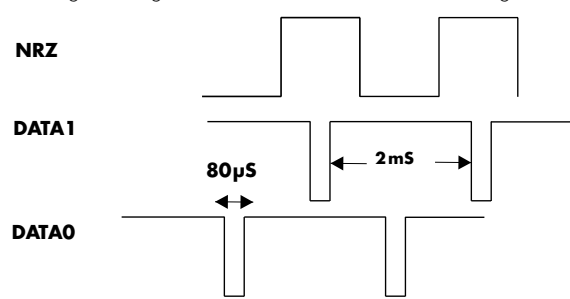
8- FRAME ARCHITECTURE

The 26- Bit Wiegand datagram is composed by as follows:

P1	Facility code	Serial number	P2

LEGENDA :

P1 = Parity even calculated over the first 12 bit : First bit coming out
Facility code = 6 bit
Serial Number = 18 bit
P2 = Parity odd calculated over the last 12 bit: Last bit coming out

Wegand Connection : a maximum cable distance when using shielded cable is around 50 metres using the industry standard Wegand or Clock & Data interface option.

GUARANTEE

The warranty period of Transmitter Solutions receivers is 24 months, beginning from the manufacturing date of the receiver. During this period, if the product does not operate correctly, due to a defective component, the product will be repaired or replaced at the sole discretion of Transmitter Solutions. The warranty does not extend to the case which can be damaged by conditions outside of the control of Transmitter Solutions, or to battery life.

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