zero
HOME AUTOMATION

Z-RADIO

CONTROL UNIT
TRANSMITTER&RECEIVER

IT | EN | FR

ZRADIO VER1.0 01012018_REV1

USER MANUAL AND CONFIGURATION

CE
made in italy

CONTENTS

The Z-BAND system is designed for Domestic, Commercial and Industrial doors and gates applications where a safety edge is used.
The system provides a wireless system replacing spiral cables or energy chain systems to provide the safety signal to the door or gate control panel.
The receiver continuously monitors the status of transmitters connected to it.
With the system you can support 8K2Ohm safety edges and also optical low power systems. Additionally you can connect just wire contacts edges.
The signal will be transferred by radio.
When an obstacle is detected, the Z-RADIO system turns its output in a safety state, changing the state of the receiver relay.
Up to three transmitters per output can be connected to the receiver. There are two outputs on each receiver that can be connected to the control panel as 8k2 or NC (normally closed) contact.
The system complies with EN ISO 13849-1:2008, category 2.

STANDARDS TO FOLLOW

ATTENTION:

• To ensure the safety of people, it is important that you read all the following instructions. Incorrect installation or incorrect use of the product can cause physical injury and material damage.
• Keep these instructions in a safe place for future reference.
• This product was designed and produced strictly for the use indicated in this manual. Any other use, not expressly indicated here, could compromise the good condition/operation of the product and/or be a source of danger.
• ZERO SRL is not responsible for the improper use of the product, or other use than that for which it was designed.
• ZERO SRL is not responsible if safety standards were not taken into account when installing the equipment, or for any deformation that may occur to it.
• ZERO SRL is not responsible for the safety and proper operation when using components not sold by them.
• Do not make any modifications to the operator components and / or their accessories.
• Before installation unplug the automatism from the source of power.
• The installer must inform the client how to handle the product in case of emergency and provide this manual to user.
• Keep remote controls away from children, to prevent the automated system from being activated involuntarily.
• The customer shall not, under any circumstances, attempt to repair or tune the automatism. Must call qualified technician only.

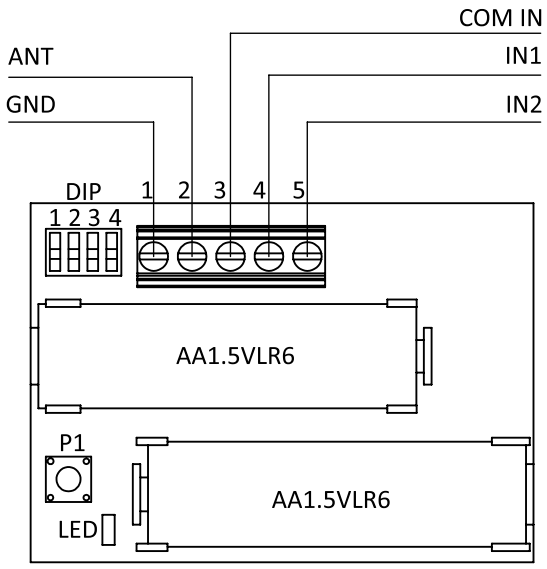
THE CONTROL BOARD

TECHNICAL SPECIFICATIONS TRANSMITTER Z-RADIO TX

Power supply:	3 V dc
Transmission absorption:	15 mA
Stand-by absorption	80 (µA)
Working frequency:	868,95 / 433,92 Mhz
Radio range over clear areas	30 m
Battery	2AA x 1.5 V ALKALINE LR6

TX Connector (see the picture bellowe)

01 • Input GND - antena earthing
02 • Antenna socket input
03 • input COM
04 • Input safety device 01
05 • input safety device 02



PROGRAMMING PRE-RECOMENDATIONS

Before proceeding to the control board configuration, note the following points listed in the table below in order to better understand the control board function:

Before continuing, cut off the MAINS POWER SUPPLY and disconnect any batteries.

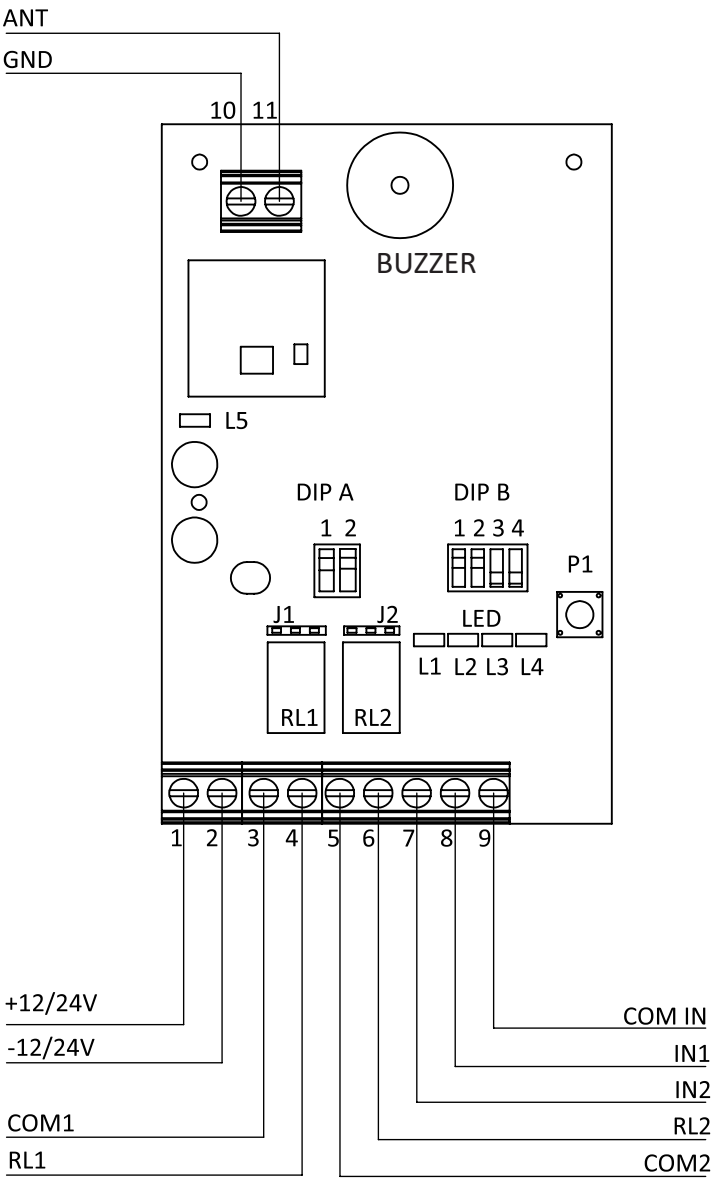
Each time you add or replace a device, you will have to reset the card and again memorize all the system devices.
Only replace with the same or equivalent batteries.

TECHNICAL SPECIFICATIONS RECEIVER Z-RADIO RX

Power supply:	12/24 Vac
Radio range over clear areas	30 m
Working frequency:	868,95 / 433,92 Mhz
Max. memory capacity:	10 Z-RADIO TX per Channel

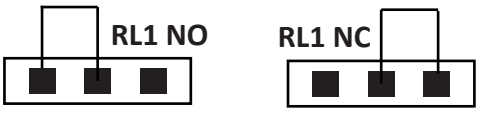
RX Connector (see the picture bellowe)

01 • + 12/24 V powe supply
02 • 0 V power supply
03 • COM output RL1
04 • Output RL1
05 • COM output RL2
06 • Output RL2
07 • Input TEST safety device 01
08 • Input TEST safety device 02
09 • COM input safety device
10 • Input GND - antena earthing
11 • Antenna socket input



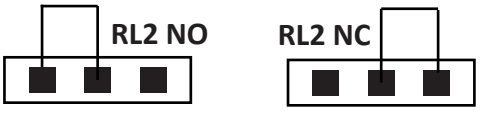
J1 Connector

• Place Shunt for Output RL1 NO (NORMALY OPEN)
• Place Shunt for Output RL1 NC (NORMALY CLOSE)



J2 Connector

• Place Shunt for Output RL2 NO (NORMALY OPEN)
• Place Shunt for Output RL2 NC (NORMALY CLOSE)



PROGRAMMING PRE-RECOMENDATIONS

Before proceeding to the control board configuration, note the following points listed in the table below in order to better understand the control board function:

Before continuing, cut off the MAINS POWER SUPPLY and disconnect any batteries.

Each time you add or replace a device, you will have to reset the card and again memorize all the system devices.

DO NOT place metal surfaces between transmetter and receiver. For maximun range, both the receiver and transmitter must be installed with same orentation.

ATTENTION: BEFORE EVERY OPERATION, RESET THE MEMORY RESET:

Press button P1 and keep it pressed until all the LEDs blink at the same time. Release the button.

DIPPERS CONFIGURATION - TRANSMITTER Z-RADIO TX

The equipment can be connected to the control panel with input for safety edge 8k2 or directly into a safety input normally closed contact as if it were a photocell or stop signal.

DIP 1 - ON	**DIP 1 - OFF**
IN 1 input NC (normaly close) safety device 01	IN 1 input 8K2 Ohm safety device 01

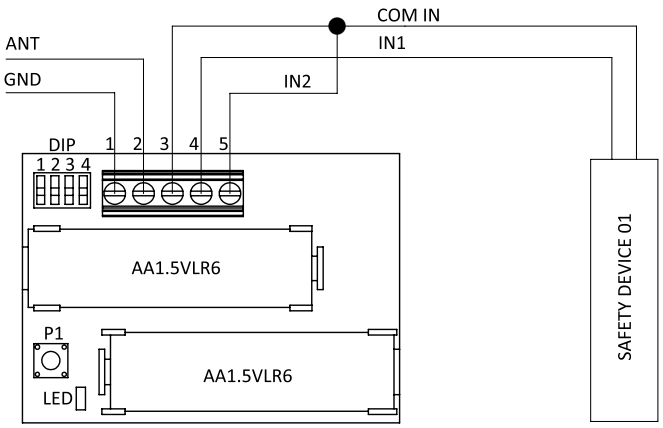
DIP 2 - ON	**DIP 2 - OFF**
IN 2 input NC (normaly close) safety device 02 *IF NOT USED CONNECT TO COM INPUT (see down wiring)	IN 2 input 8K2 Ohm safety device 02 *IF NOT USED CONNECT TO COM INPUT (see down wiring)

DIP 3 - ON	**DIP 3 - OFF**
Low Power RADIO transmission	High Power RADIO transmission

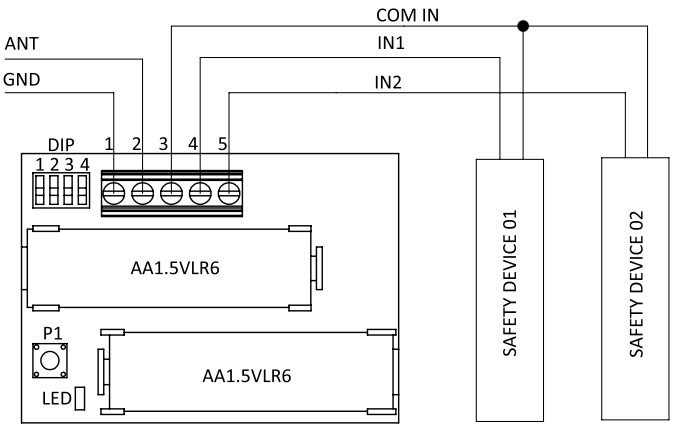
DIP 4 - ON	**DIP 4 - OFF**
Working frequency 433.92 Mhz	Working frequency 868.95 Mhz

NOTE
Before programming, place the DIPPERS at the desired position. Any subsequent change will require a receiver reset and reprogramming.

ONE SAFETY DEVICE CONNECTION
TRANSMITTER Z-RADIO TX



TWO SAFETY DEVICES CONNECTION
TRANSMITTER Z-RADIO TX



LOW BATTERY CONTROL:

The transmitter is powered by two commonly used 1.5V AA batteries. Once the low battery threshold is reached, the transmitter communicates this data to the RXR receiver, which decodes it as follows:

An acoustic tone identifies the TX number 1, two acoustic tones identify the TX number 2, etc. etc.
- The low battery tone will be emitted every 12 seconds in the high-speed setting (RECEIVER RX DIPA 1 ON)
- The low battery tone will be emitted every 120 seconds in the normal setting (RECEIVER RX DIPA 1 OFF)
- The low battery tone will be emitted whenever safety occurs

NOTE: the transmitter after the low battery transmission remains operational for about 36 months.

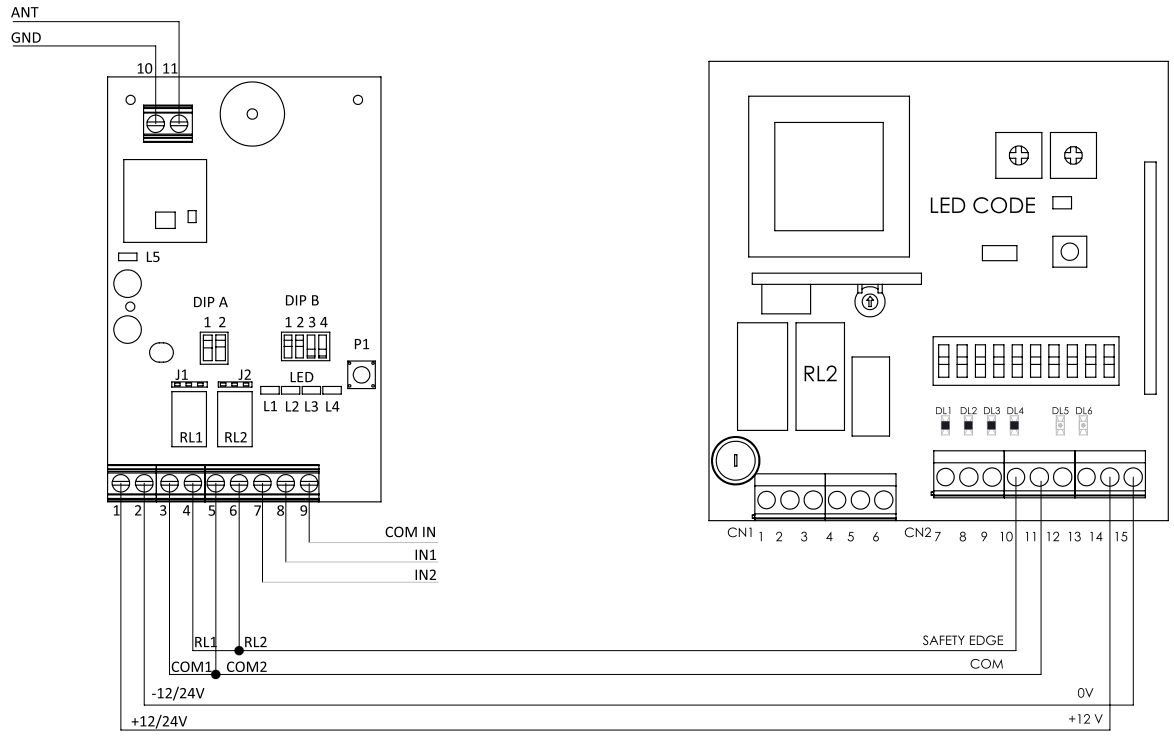
DIPPERS CONFIGURATION - RECEIVER Z-RADIO RX

The equipment can be connected to the control panel with outputs for safety edge 8k2 or directly into a safety input normally closed contact as if it were a photocell or stop signal.

DIP A 1 - ON	**DIP A 1 - OFF**
IN 1 input NC (normaly close) safety device 01	IN 1 input 8K2 Ohm safety device 01
DIP A 2 - ON	**DIP A 2 - OFF**
IN 2 input NC (normaly close) safety device 02	IN 2 input 8K2 Ohm safety device 02

DIP B 1 - ON	**DIP B 1 - OFF**
Activates High Speed Comunication. *** Used in this way, the system complies with current EN regulations.**	Activates Low Speed Comunication (low power consumption)
DIP B 2 - ON	**DIP B 2 - OFF**
Input TEST IN1 if POSITIVE signal comes from control board	Input TEST IN1 if NEGATIVE signal comes from control board *** IF OUTPUT TEST SIGNAL NOT USED**
DIP B 3 - ON	**DIP B 3 - OFF**
Input TEST IN2 if POSITIVE signal comes from control board	Input TEST IN2 if NEGATIVE signal comes from control board *** IF OUTPUT TEST SIGNAL NOT USED**
DIP B 4 - ON	**DIP B 4 - OFF**
Working frequency 433.92 Mhz : LONG ANTENA WIRE 17,5 cm	Working frequency 868.95 Mhz : SHORT ANTENA WIRE 8 cm

TWO SAFETY DEVICES CONNECTION RECEIVER Z-RADIO RX



PROGRAMMING STEPS

STEP 1

Following the instructions (section TRANSMITTER TX) make configuration of installed safety device (numbers, types).

STEP 2

Following the instructions (section RECEIVER RX) make configuration of installed safety device (numbers, types) and their functions (frrequency, numbers).

STEP 3

Make all wiring connections on safety devices and antena.

STEP 4

Select J1 and J2 jumper function.

STEP 5

Put the TRANSMITTER TX and RECEIVER RX at minimum distance of 50 cm, just to avoid interference while programming.

STEP 6

Plug in the batteries for TX and power RX (make all wiring connections). LED light on TRANSMITTER TX will flash and turn off. Now TRANSMITTER is powerd. If LED light keep flashing plug out the batteries and check the distance between TX and RX and plug in the batteries again.
On RECEIVER, will flash L4 LED (communication activated) and L5 LED will be turned on (fix light indicate RX powerd).
NOTE: RL1 and RL2 outpust are normaly closed contacts.

STEP 7

LEARNIG TRANSMITTERS.
Firstly RESET memory on both (RECEIVER and TRANSMITTER).
By keeping pressed P1 button, wait for LED light turn ON, after 5 second will go OFF, reset is completed (TRANSMITTER).
By keeping pressed P1 button after 5 second L1, L2,L3,L4 will flash together, release P1 and will remain flashing L4, reset is completed (RECEIVER).

STEP 8

Press P1 on RECEIVER once for RL1 (L1 led light will turn on), twice for RL2 (L2 led light will turn on), depending on how many safety devices are installed, now press P1 button ONCE (for IN1) on TRANSMITTER and after 3 secons a short buzzer beep will indicate TX stored. For IN2 on same TX press P1 TWICE and after 3 secons a long buzzer beep will indicate TX stored.
On each RL can be stored maximum 10 different TRANSMITTERS.

STEP 9

LEARNING second (and so on) TRANSMITTER, follow the instructions at STEP 8, the short buzzer's beeps will be the same number of programmed transmitters (two beeps for second TX, three beeps for third TX, and so on).

STEP 10

SIGNAL TEST PROCEDURE WITH A TRANSMITTER PREVIOUSLY CONFIGURED.
Press the P1 button on the RX receiver repeatedly until all the LED's are lit at the same time. Now press the P1 button on the TX transmitter to be tested, at this point you will hear 1 beep if reception is excellent, 2 tones if normal, 3 tones if poor.
To exit the test mode, press the P1 button once on the RXR receiver, the LEDs will switch off.

FACTORY DEFAULT CONFIGURATION

TRANSMITTER	**DIP**		
	1	**ON**	SAFTY DEVICE 01 INPUT (SAFETY EDGE switch wire connection)
	2	**ON**	SAFTY DEVICE 02 INPUT (SAFETY EDGE switch wire connection), if not used connect to COM
	3	**ON**	High-speed communication activated
	4	**OFF**	Working Frequency 433.92 Mhz
RECEIVER	**DIP A**		
	1	**ON**	OUTPUT 1 NC - normaly closed
	2	**ON**	OUTPUT 2 NC - normaly closed
	DIP B		
	1	**ON**	Activates High Speed Comunication.
	2	**OFF**	INPUT TEST SIGNAL NOT USED
	3	**OFF**	INPUT TEST SIGNAL NOT USED
	4	**ON**	Working Frequency 433.92 Mhz
JUMPER	**J1**		RL1 - CONTACT NC - normaly closed
	J2		RL2 - CONTACT NC - normaly closed

SIGNAL TEST PROCEDURE WITH A TXR TRANSMITTER PREVIOUSLY SET.

Press the P1 button on the RX receiver repeatedly until all the LED's (L1,L2,L3,L4) are lit at the same time.
Now press the P1 button on the TXR transmitter to be tested, at this point you will hear 1 beep if reception is excellent, 2 beeps if normal, 3 beeps if poor.

To exit the test mode, press the P1 button once on the RX receiver, the LEDs will switch off.

NOTE:

If High-speed communication activated: by connecting the test inputs IN1 and IN2 to the control unit having the test output, the RECEIVER will test all the configures TRANSMITTERS, if these respond and detected, the receiver sets the outputs (RL1 and RL2) in operation. In this configuration the TX signal reception is always active, continuous reception.
Used in this way, the system complies with current regulations. Battery life (2 LR06 1.5V AA) = 24 months

TROUBLESHOOTING

Anomaly	Procedure
RX and TX doesn't work	Make sure you have RESET all devices.
LED light on TX turned on	Make sure you have placed DIPPERS in right configuration (frequency, safety devices model. Unplug the batteries and RESET the device. Make sure that distacne between RX and TX is at least 50 cm. Make sure you have RESET all devices.
L4 led light doesn't flashing	Make sure if antenas are connected and same working frequency configured
BUZZER keep having beeps	Check the battery power, if necessary replace.
LED L1-L2-L3-L4 on RX turned on	press P1 to quit
SAFETY DEVICE doesn't work	Check DIP A and DIP B setting on RECEIVER and J1 and J2 jumper configuration

Pertinent Regulations

RX paired with TX is a class 2 safety device (EN 954-1). Once installed, check compliance with the applicable parts of the following regulations: EN 13241-1, EN 2453, EN 12445.

ZERO SRLS is not liable for any damage caused if the product is used improperly, wrongfully or unreasnably. The product complies with the relevant directives in force.

Decommissioning and disposal

Do not dispose of thepackaging and the device in nature, at the end of its life cycle, but rather dispose of them by following the applicable laws in the country where the device is installed. The recyclable components all bear a symbol to that effect.

THE DATA AND INFORMATION IN THIS MANUAL MAY BE CHANGED AT ANY TIME AND WITHOUT NOTICE. THE MEASUREMENTS, UNLESS OTHERWISE STATED, ARE IN MILLIMETERS.

EC DECLARATION OF COMFORMITY:

The undersigned Mr. ANDREA MARAN , representing the following manufacturer,

ZERO SRL Via Roma 25/A 36077 ALTAVILLA VICENTINA (ITALIA)

Declares that the equipment described below:

Description: Electronic control unit
Model: Z-RADIO
Is in compliance with the provisions set down in the following directives:

- 2004/108 EC Directive (EMC Directive)
- 2006/95/CE Directive

ALTAVILLA VICENTINA (VI) – Italia
01-01-2018

and he also declares that it is not allowed to commission the device until the machinery where it will be incorporated or whose it will become a component will have been identified and will have been declared in compliance with the conditions of the 2006/42 EC Directive and with the national legislation that transpose it.

ANDREA MARAN
ZERO SRLS Representative

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