

4.0 Description

4.1 Introduction

Erone Digikey is a codified radio keyboard operating at 433,92 MHz.

The best use of the product is on applications where a codified radio signal has to be used to control: gates, garage doors, rolling shutters, sun-blinds, anti-burglar appliances, lightings, etc.

The code has a very high security coding system. (KeeLoq® Hopping code).

The code sent by the transmitter changes at every activation, avoiding any scanning and copying risk.

A special algorithm allows to keep synchronized transmitter and receiver.

The radio transmission is enabled only after the dialing of a security user code.

There are up to 6 + 2 different channels that can activate up to 6 different receivers or relays.

The receiver that can be used to operate with, can be one of the Series Erone SEL2641R433.

The internal memory can store up to 22 different security user codes and 1 Master code.

The product fully complies with the European directives 73/23/CEE, 89/336/CEE, 99/05/CE.

The keyboard has a Master Password factory-set to "11111".

No radio signal can be transmitted until the Master default Password hasn't been changed

If the Master Password remains the default one the following functions are allowed:

- Insertion of new User Codes;
- Cancellation of stored User Codes;
- Replacement of the Master key itself.

The Master Password and the User code can have up to 5 digits. If the chosen string is shorter than 5 digits, press the key "#" after the last digit to complete the number as indicated below:

Example 1 : User code 123 : Digit 1,2,3,#.

Example 2 : User code 1234 : Digit 1,2,3,4,#.

After 8 wrong dials of the master Password, the system disables the password and requests the dialing of the PUK code (Password Unblocking Key).

The procedure can be followed even if the Master Password is lost, in order to reset the security factory configuration.

The PUK is provided inside the packaging of the product.

Each user can access to the transmitter by dialing his own code.

For this procedure you need to know the Master Password.

For the transmission, the user has first to digit the User Code (not the Master Password) and then to press the key to activate (1 , 2, 3, 4, 5, 6)

4.2 Special functions

- The key "*" cancel the dialing;
- The key "# " repeat the last command (within 20 sec.)

The keyboard can transmit other 2 signals, different from the normal six signals of the keys (1 - 6).

"Tamper switch signal" : Where installed, the tamper is a switch with a NO contact, which put the keyboard in transmission if the contact is released. The tamper-type signal is transmitted when the following conditions occur:

- 1) When the tamper is released;
- 2) At every command key activation in tamper released state.

“Low Battery signal” : The low battery alarm activates the RF transmission when the battery level is under the configured value. The signal is sent at every command key activation.

The memorization of the special signals on the target receiver can be done as follows

Tamper Signal:	1) Dial the Master Password	2) Press key “1”
Low Battery Signal:	1) Dial the Master Password	2) Press key “2”

4.3 Rolling code synchronization system

The code transmitted by the transmitter changes at each key activation.

It means that the receiver has to be able to follow the right sequence in order to activate its outputs.

The code actually transmitted is composed by 3 main blocks:

- a manufacturer key
- a serial number
- a counter number

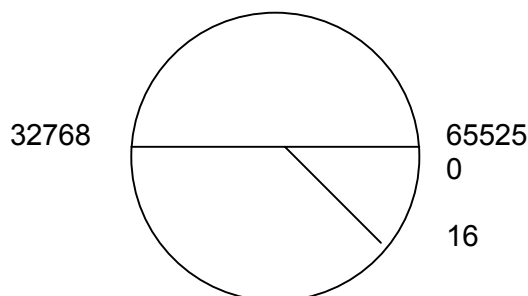
The manufacturer key is proprietary of the manufacturer and is fixed in each transmitter.

The serial number is characteristic of each transmitter and is set-in-factory by the manufacturer during the programming of the micro; for this reason it is different for each transmitter.

The counter number comes from a counter which increments at every activation.

All the above numbers once assembled are encrypted and then sent to the modulator.

The synchronization system operates as follows:



Once the serial number of the transmitter has been stored into the receiver memory, is the counter number received and the counter number of the receiver differ for less of 16 , the receiver updates its counter and enable the output.

If the difference between the two counter numbers is greater that 16 but less then 32768, the synchronization can occur only after 2 consecutive received counter numbers (that means two close transmissions with out any error of the transmitter).

If the difference is greater of 32768 the receiver doesn't activate the outputs.