

SPECIFICATION AND USER'S MANUAL

type of the device: 4-channel set, type: RSU KO4/1

the set contains: 4-channel RSU KO4 receiver and two 4-button PUK 104 remote controls

TECHNICAL PARAMETERS OF THE RECEIVER

- class: C
- type of receiving module: superreaction
 - sensitivity: -100 dBm
 - frequency: 433,92 MHz
- radio transmission: Keeloq hopping code by Microchip Technology
 - memory capacity: 40
- voltage supply:
 - nominal: 12 V DC
 - allowable: 10-15 V DC
 - power consumption:
 - static: 22 mA
 - maximal: 104 mA
- capacity:
 - relay output: 1A/ 30 V DC
- number of relays: 4
- relay's operating mode: mono, bistable and temporary, two-key
- time scope for the mono mode: ~1s-4min15s
- operating temperature range: 0 to +40
- dimensions (mm): 48*68*26
- cooperation: any GE sender
- operating range (m)*: 100-500
- colour: white

* range depends on the type of the sender

TECHNICAL PARAMETERS OF THE REMOTE CONTROL

- class: C
- frequency: 433,92 MHz
- transmission: coded (Keeloq hopping code by Microchip Technology)
 - number of buttons: 2
- sending power: <5mW
- power supply: 1 battery 12V
- dimensions (mm): 29*61*11
- colour: black
- cooperation: any GE receiver
 - operating range (m):
 - with superreactive receiver: 100
 - with heterodyne receiver: 200

The operating range: the following range (100m) concerns the open space (without any obstacles, when the receiver and the remote control can "see each other"). If there are any obstacles between the receiver and the sender, one must assume that the range would be reduced: for wood and plaster it would be 5-20% lower, for bricks 20-40% lower, and for reinforced concrete 40-80% lower. If there are many obstacles we advise to configure sets using the receivers of the SH class, to use retransmitters or stronger remote controls. If there are metal obstacles, using the radio systems is not recommended. In such situation, one should consider installing WLC 201 module, which helps to avoid the problem. The double value given in the technical specification of the remote control concerns cooperating with different types of receivers. The first value (the smaller one) concerns the superreactive receivers of the RSU type, the second one (the larger one) – with the superheterodyne receivers, for example OPC, IDO.

The purpose of the elements.

Diode SUPPLY control (green ZAS) – it indicates connection of the power supply

Diode CHANNEL 1,2,3,4 control (red K1,K2,K3,K4) – it signals that the relay 1,2,3,4 is open

LEARNING button – launches the programming procedures

ANTISABOTAGE – allows for connecting the device to the antisabotage circuit

Jumpers – changes the relays output type (NO or NC)

The RSU-K04/1 receiver has two types of outputs: NC or NO. Output type is determined by jumpers.

We recommend to install the receiver as high as possible, far from any metal or electric devices because the the superreactive receiver is sensitive to electromagnetic interferences. In conditions of high electromagnetic interferences, using superheterodyne receivers (for example, OPC type) is recommended. The RSU-KO4 receiver requires dry and closed places.

The transmission code.

The radio transmission, based on the hopping code (KeeLoq by Microchip Technology Inc. USA) guarantees the high safety of using. Each transmission is different from the previous one. To make the receiver work, you must enter a remote control into its memory – it is the basic condition.

The remote control can be programmed to unlimited number of receivers. "Loosing" 15 successive transmissions (using the remote control beyond the receiver's range) requires sending the signal twice (press the remote control button twice).

The principal use.

The receiver can be used as equipment which controls remotely the work of the following devices: gates and barriers, electromagnetic locks, lights etc. In alarm systems it is used:

- as a panic button
- as a unit which controls the work of other devices of the system, for example, sensors
- to arm or disarm the system, zones, etc.

Frequency.

The device operates on the frequency 433,92 MHz. In majority of the European Union countries (including Poland) this bandwidth does not require any special permissions and concessions for using it.

1. REGISTERNG A NEW REMOTE CONTROL IN THE RECEIVER'S MEMORY

- a) press the LEARNING button for at least 1 second – the receiver's diodes will light up, release
- b) choose a channel using the LEARNING button
- c) double press the remote control button which is supposed to control the chosen channel – the LED diode will blink and fade.

Check whether the remote control works correctly. If you press the button on the remote and the receiver will not reaction, that is, that learning has failed and must try again.

If the receiver's memory is full (40 remote controls were programmed), programming next control will delete the one which was programmed as the first.

When installing systems with a larger number of users, use 4-channel receiver IDO 1000 (memory capacity: 1000 senders).

2. DELETING

- press the LEARNING button for at least 8 second – the receiver's diodes will blink and the LED diode of the last learned channel will light
- release the LEARNING button – the LEDs will fade – all transmitter deleted
- check whether the process run correctly

1. one must remember that deleting concerns the whole capacity of the memory. If you want to remove only one or several remote controls, you must re-enter those remote controls which are supposed to be saved.
2. If there are many users and you want to avoid the toilsome process of programming the remote controls individually, you can use one of the identifying receivers (their parameters allow for deleting the controls individually)
3. deleting the senders does not change the operating mode of the receiver
4. disconnecting the supply voltage does not cause losing the information about programmed remote controls or the operating mode of the receiver.

3. SETTING THE RECEIVER'S OPERATING MODE

In order to set the receiver's operating mode one needs a remote control which has previously been entered into the receiver – check point 1. Manufacturing settings – channel 1, 2 and 3 – the bistable mode; channel 4 – the temporary mode. All channels may operate in any of the following modes: bistable (each press of the remote control, the relay state the opposite), temporary (after sending the transmission from the remote control, the receiver's relay will be active as long as you hold the remote control button), monostable mode (timer – after sending the transmission from the remote control, the receiver's relay will be active for a previously set period), two-key mode (odd number key activates the relay, odd – off).

- press the LEARNING button for at least 3 seconds but not more than 5 seconds – all the LEDs will flash - press release "LEARNING"
- choose a mode using the LEARNING button,
 - o K4 and K1 LED lights – bistable mode
 - o K4 and K2 LED lights – monostable mode
 - o K4 and K3 LED lights – temporary mode
 - o K4 only LED lights – two-key mode
- press the button of a remote control which has already been registered on this channel
- the LEDs diode will blink 3 times and fade
- check whether the relay works correctly.

4. Set the time for the monostable mode.

In monostable mode, you can program the relay in the range from about 1 second to about 255s (about 4min 15s). To change the mode of operation of the pilot channel is required for the programmed channel button.

- press the LEARNING button for at least 5 seconds but not more than 8 seconds – all LEDs will blink after a while they start to blink much faster - release the "LEARNING"
- after the key is released, "LEARNING" all the LEDs will blink slowly
- since then wait for the desired time and press the transmitter's button
- the LEDs diode will blink 3 times and fade
- check whether the relay works correctly.

**The device meets the requirements of the directives EMC 89/ 336/ EEC and
RTTE 1999/ 5/ EC.**

