

## Specification and user's manual

type of the device: 4-channel RSU KO4 receiver

it concerns the RSU KO4 receiver and the receivers comprising the RSU-KO4 set

### TECHNICAL PARAMETERS OF THE RECEIVER

type of receiving module: superreaction

sensitivity: -100 dBm

frequency: 433,92 MHz

radio transmission: Keeloq hopping code by Microchip Technology

memory capacity: 56 buttons

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

time scope for the mono mode: ~1s-2min10s

operating temperature range: 0 to +40

dimensions (mm): 57\*90\*23

cooperation: any GE sender

operating range (m)\*: 100-500

colour: white

\* the range depends on the type of the sender

### TABLE OF RANGE

100 metres types of the remote controls: PUK 101, PUK 102, PUK 104, PUK 112-1, PUK 112-2

200 metres PNH 201 hermetic button

300 metres PUK 303 remote control

500 metres types of the remote controls: RNB 101, RNB 101S, and NRP 100 stationary sender

The range concerns the open space (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 use retransmitters or stronger remote controls. If there are metal obstacles, using the radio systems is not recommended. In such situation, consider installing WLC 201 module, which helps to avoid the problem.

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

The purpose of the elements:

- the LEARNING button is used to launch the programming procedures
- the LED OPERATING diode – it shows whether the relay is open or closed. During programming it indicates the programming procedures with its frequency of work
- switch – changes the receiver's operating mode (it concerns channel 1)
- CHOOSE A CHANNEL button – allows for choosing the required channel during programming
- potentiometer – is used to set the monostable mode on the channel 1

The RSU-KO4/1 receiver has two outputs:

1. two NO/NC relay outputs (channel 1 and 2)
2. two NO relay outputs with a possibility to change on the NC output (channel 3 and 4)

The receiver installation conditions

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) provides high safety of using. Each transmission is different from the previous one. The basic condition for the receiver to work is to enter the remote control into its memory. The remote control can be programmed to unlimited number of receivers. „Loosing“ 15 successive transmissions (using the 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:

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

The device works 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.

## USER'S MANUAL

Important! In order to run the programming procedures, the switch has to be set on the position B.

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

- press the LEARNING button for at least 0,5 second – the receiver's diodes will blink
- the LED diode of the last learned channel will light
- choose a channel using the CHOOSING CHANNEL button
- press the remote control button which is supposed to control the chosen channel – the LED diode will fade
- press the control's button once more and keep it pressed until the LED diode starts blinking

If the registration succeeded, the LED diode will blink for about 4 seconds and then will fade. Check whether the remote control works correctly. If you press the control button for the second time and the LED diode does not blink but lights for about 2 seconds, it will mean that the learning failed (you need to start it from the beginning).

After filling the whole memory (56 buttons of the remote controls have already been entered), registering a new control will fail. In case of losing a remote control, delete only the controls which worked on the same channel as the lost one. In the given channels all the controls will be deleted, even those which are presently in use and one has to re-enter them into the receiver's memory. When installing systems with a larger number of users, use 4-channel receiver IDO 500 (memory capacity: 500 senders).

### 2. DELETING

- press the LEARNING button for at least 0,5s – the receiver's diodes will blink and the LED diode of the last learned channel will light
- choose a channel using the CHOOSE A CHANNEL button
- press the LEARNING button for a longer period (about 8 sec.) until the LED diodes start to blink – they will blink for about 4s and then will fade
- 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 the ones which are supposed to be saved.
2. If there are many users and you want to avoid the toilsome process of programming the 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.

## 5. 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. Channel 1 may operate in any of the following modes, while the rest of them (channel 2, 3 and 4) may operate only in the bistable and temporary mode.

The monostable mode (timer) – after sending the transmission from the remote control, the receiver's relay will be open for a previously set period. It concerns channel 1.

- set the switch on M position
- using the potentiometer, set the required time

The bistable mode (flip-flop) – after receiving the transmission from the remote control, the relay flips on the other state.

The temporary mode – after receiving a correct transmission from the remote control, the relay is open as long as you keep the remote control button

- press the LEARNING button for at least 0,5s – the receiver's diodes will blink and the LED diode of the last learned channel will light
- choose a channel using the CHOOSE A CHANNEL button
- press the button of a remote control which has already been registered on this channel:
  - shorty for the bistable mode or long for the temporary mode (long means until the diode fades)
  - the LED diode will fade and light for a moment
- check whether the relay works correctly