Satel®

RX-1K

1-CHANNEL RADIO REMOTE CONTROLLER

The RX-1K controller allows you to use keyfobs to control device connected to relay output. Because it is designed for use with the alarm system, it has inputs supervising the state of the alarm system, as well as an output for indication of arming / disarming / alarm clearing.

1. Features

- 1 control channels.
- Support for up to 40 keyfobs.
- Transmissions secured by KeeLoq code hopping.
- 1 relay output.
- 2 OC type outputs:
    - indication of low keyfob battery,
    - indication of arming / disarming / alarm clearing in the alarm system.
- 2 inputs to supervise the state of the alarm system:
    - armed mode information,
    - alarm information.
- LED indicator.
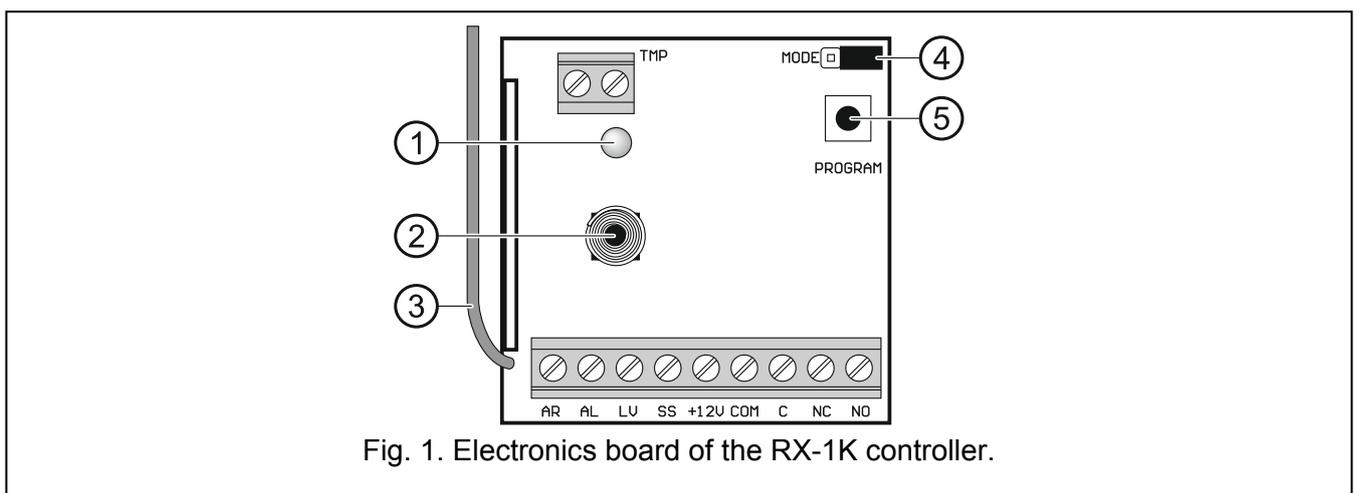- Tamper switch activated by cover removal.

2. Electronics board

Fig. 1. Electronics board of the RX-1K controller.

1. bicolor LED indicator:

    ON in green – power OK,

    ON in red – transmission has been received from keyfob,

    flashing red – transmission has been received from keyfob with low battery.

2. tamper switch.

3. antenna.

④ MODE pins. To be used for setting the operating mode of relay output.

⑤ PROGRAM button. Allows you to enroll keyfobs, define the cut-off time of relay output or restore the factory default settings.

Terminals

TMP - NC type tamper output (opening the tamper switch opens the output). You can connect the TMP output to the appropriately programmed output of the alarm control panel.

AR - input supervising the armed status in the alarm system. The input is activated after applying the common ground. Connect the AR input to the control panel OC type output programmed as "Armed status".

AL - input supervising the alarm status in the alarm system. The input is activated after applying the common ground. Connect the AL input to the control panel OC type output indicating the alarm to be cleared.

LV - output indicating low battery in the keyfob. The output will be turned on after receiving a transmission from the keyfob with low battery. The output will be turned off after receiving a transmission from the keyfob whose battery is OK. OC type output (shorted to common ground when active). You can connect e.g. a LED to the LV output, or you can connect the output to an appropriately programmed zone of the alarm control panel.

SS - output indicating arming / disarming / alarm clearing in the alarm system. The indication will be triggered if the AR and/or AL input status is changed within 4 seconds of receiving a transmission from the keyfob. The indication is provided in the form of pulses of 0.16 second duration:

1 pulse – arming,

2 pulses – disarming,

4 pulses – disarming and/or alarm clearing.

OC type output (shorted to common ground when active). You can connect e.g. a siren to the SS output.

+12V - power input (9...16 V DC).

COM - common ground.

C - relay output common contact.

NC - relay output normally closed contact.

NO - relay output normally open contact.

3. Keyfobs

The controller supports the following SATEL 433 MHz keyfobs:

MPT-300 – 5-button keyfob,

T-4 – 4-button keyfob,

T-2 – 2-button keyfob,

T-1 – 1-button keyfob,

P-4 – 4-button keyfob,

P-2 – 2-button keyfob.

The controller is delivered with two P-2 keyfobs.

3.1 Keyfob battery replacement

The battery life depends on how the keyfob is used. The more frequently the buttons are pressed, the faster the battery drains. When the controller indicates that the battery is running low (LED; LV output), replace the battery as soon as possible.

⚠ **There is a danger of battery explosion when using a different battery than recommended by the manufacturer, or handling the battery improperly.**

> Be particularly careful during installation and replacement of the battery. The manufacturer is not liable for the consequences of incorrect installation of the battery.
>
> The used batteries must not be discarded, but should be disposed of in accordance with the existing rules for environment protection.

4. Installation

⚠ **Disconnect power before making any electrical connections.**

Changes, modifications or repairs not authorized by the manufacturer shall void your rights under the warranty.

The controller should be installed indoors, in spaces with normal air humidity. When selecting the installation place, take into consideration that thick walls, metal partitions, etc. will reduce the radio signal range. It is recommended that the controller be mounted high above the floor. This will allow you to get a better range of radio communication and avoid the risk of the controller being accidentally covered by people moving around the premises. Mounting the controller near electrical installations is not advisable, as this may cause malfunction of the device.

Note: When closing the enclosure, make sure that the programming button is not pressed by the cables.

5. Configuring

You can configure the controller using PROGRAM button and MODE pins.

5.1 Enrolling a keyfob

1. Press the PROGRAM button. The LED will start flashing green.
2. Press the keyfob button. The LED will start flashing red.

Note: If the LED will turn on in green, it means that no more keyfobs can be enrolled or the keyfob is not supported.

3. Press the same keyfob button again. The LED will turn on in green.

5.2 Restoring factory default settings and deleting keyfobs

When restoring the factory default settings, you can delete all keyfobs.
1. Press and hold down the PROGRAM button.
2. After about 3 seconds, when the LED flashes red once, release the button.
3. Press and hold down again the PROGRAM button.
4. After about 3 seconds, when the LED starts flashing red, release the button.
5. When the LED stops flashing red and turns on in green, it means that the factory default settings of the controller have been restored.

5.3 Setting the operating mode for a relay output

MODE ▫■	**Pulse mode** [jumper across two pins on the right] – the relay output is turned on when the keyfob button is pressed (up to 30 seconds – then the keyfob stops transmitting to prevent the battery discharge).
MODE ■▫	**Monostable mode** [jumper across two pins on the left] – pressing the keyfob button turns on the relay output for a preset time.
MODE ▫▫▫	**Bistable mode** [jumper removed from pins] – each pressing the keyfob button changes the relay output status to the opposite one.

5.4 Programming the relay output cut-off time

If the relay output works in the monostable mode, you can program the cut-off time for it ranging from 1 to 255 seconds (by default: 5 seconds).

1. Press twice the PROGRAM button. The LED will go off.
2. Press the keyfob button. The LED will start flashing green and red alternately.
3. Measure the time during which the relay output is to be turned on and press the keyfob button again. The LED will turn on in green.

6. Specifications

RX-1K controller

Supply voltage ....9...16 V DC
Standby current consumption .... 13 mA
Maximum current consumption .... 30 mA
Operating frequency band .... 433.05 ÷ 434.79 MHz
Relay output ....2 A / 24 V DC
LV output ....50 mA / 12 V DC
SS output..500 mA / 12 V DC
Operating temperature range ....-10°C...+55°C
Maximum humidity.. 93±3%
Dimensions.. 118 x 72 x 24 mm
Weight ....75 g

P-2 keyfob

Operating frequency band .... 433.05 ÷ 434.79 MHz
Radio communication range (in open area) ....up to 200 m
Battery ....23A 12 V
Operating temperature range .... -20°C...+55°C
Dimensions... 37 x 55 x 15 mm
Weight ....24 g