



Radio Security systems

RS-4000 radio alarm system

**RT4-5se object device.**

**(version 2.0)**

Install manual

## General information

**RT4-5se** is made for gathering information about secured object, it's handling and transmitting to alarm receiver. Also, **RT4-5se** realizes external supply control, and when it is lower critical limit or restores in normal condition, sends this information to the alarm receiver. If the outer input condition had not been changing for a long time, than a test message is sent to the alarm receiver.

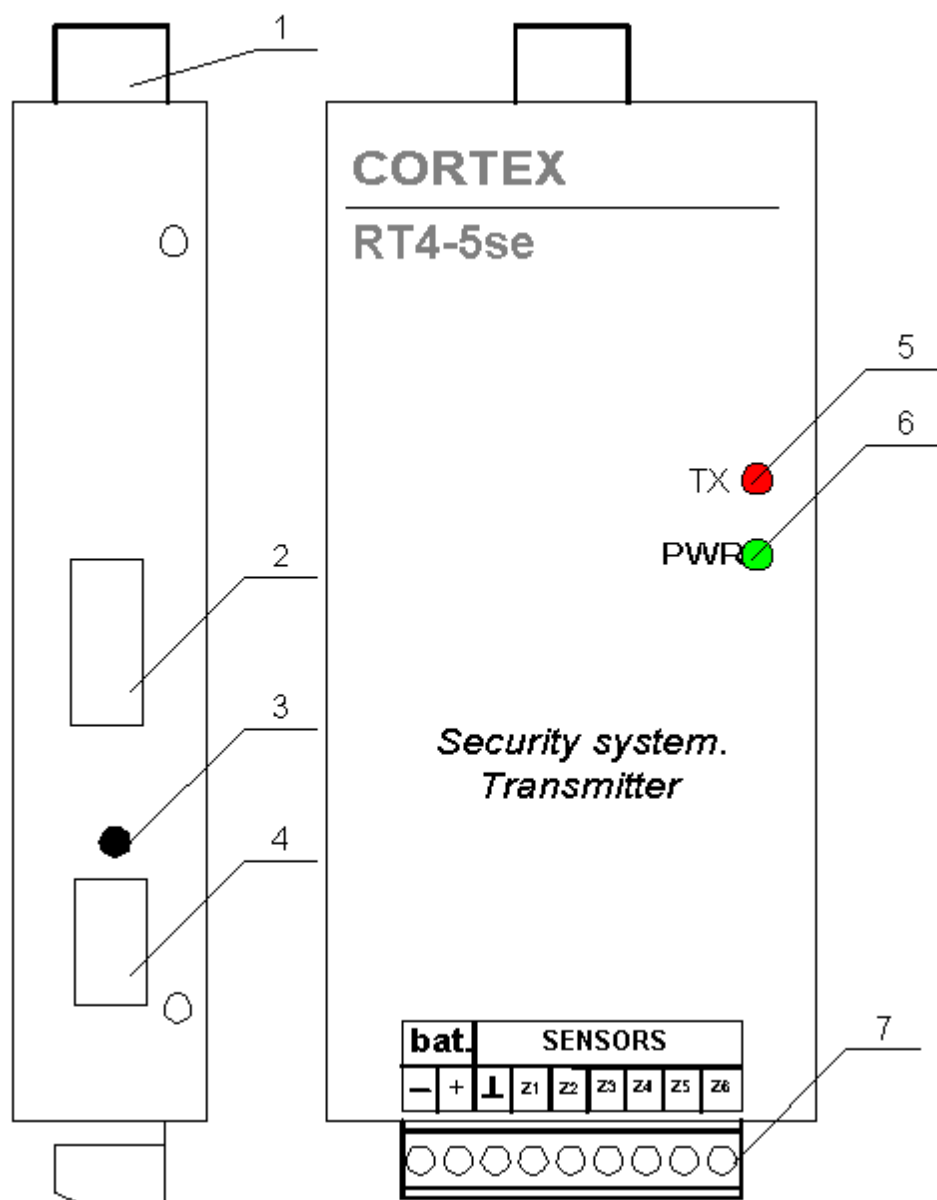
**RT4-5se** object device is made in closed metal frame. Appearance and control and indication units are shown on the Pic.1.

**RT4-5se** object device version 2.0 has an additional function - control panel mode (see page 5).

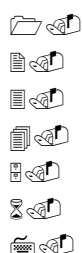
## General performance attributes

|                                        |             |
|----------------------------------------|-------------|
| Frequency range                        | 139 -174MHz |
| Radiation class                        | 8K0F1D      |
| Carrier power, at most                 | 5W          |
| Frequency deviation, at most           | 2,5kHz      |
| Carrier frequency instability, at most | 10ppm       |
| Off-frequency emission power, at most  | 0.25μW      |
| Transmitting time                      | 128ms       |
| Number of transmissions for one event  | 3*          |
| Test transmission number               | 3*          |
| Test transmission period, hours        | 10*         |
| Entry delay time                       | 45s*        |
| Exit delay time                        | 60s*        |
| Power supply                           | 11-14V      |
| Input current:                         |             |
| In asleep mode, at most                | 15mA        |
| In transmitting mode, at most          | 1.7A        |
| Dimensions, mm                         | 160x70x25   |
| Category temperature range             | -10 - +50°C |

**\* - Programmable parameter, default value specified.**



**Рис. 1**



Antenna socket.

Programming slot.

Registration button.

Terminal board for work modes setting.

Transfer mode indicator.

Power supply and diagnostics indicator.

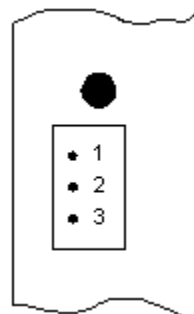
Terminal board for power and additional device wiring.

## Transmitter programming and mode setting.

Transmitter programming is made with the help of programmer using personal computer's parallel port.

Объектовое устройство **RT4-5se** позволяет программировать:

- Object device physical address
- Repeater address, on which transmitter is registered
- Number of transmission sessions for every event
- Number of transmission sessions for every test
- Test period



**Pic. 2**

**RT4-5se** object device has three modes of operation.

### 1. Parallel input mode.

In this mode object device works like six-input translator i.e. transmits any change in inputs to the alarm receiver. All object device inputs can work with signals like «Short to ground» (by default) or «short to +12V». To switch object device inputs into «short to +12V» mode simply mount jumper between contacts 2 and 3 (see Pic.4).

### 2. Serial interface mode.

To turn his mode on simply mount jumper between contacts 1 and 2 (Pic.2).

***Object device power supply must be turned off!***

When in this mode, object device uses synchronized serial interface to receive information (Z1 input – data, Z2 – time units) and can transmit to alarm receiver up to 8 bytes of information. This allows receiving a detailed information (alarm types, users Ids, ect.) from control panels, using basic additional devices, and transmit it to alarm receiver. Functions of the other four inputs are kept.

### 3. Control panel mode.

**This mode cannot be switched on the fly, but can only be programmed by developer. If control panel mode is activated, other two modes cannot be turned on**

**Attention:** no jumper must be mounted between contacts in this mode.

In this mode device controls the status of all it's inputs according to security state "ARMED" or "DISARMED".

More information about this mode see in "**Working in control panel mode**".

## Diagnostics

When using **PWR** indicator (Pic.1) it is possible to locate following troubles:

- ***Object device power supply is lower than 11V*** – indicator blinks **once a second** – Change battery or power source.
- ***Fixed memory failure or wrong programming*** – indicator blinks **4 times a second** – program your device again.

## Mounting recommendations.

It is recommended to realize device power supply right through battery, that is used as a spare power source, or from **VSCS-1,5** supply «+12V» output.

Before object device power supply, it is necessary to wire antenna. Antenna can be wired to the antenna joint, or by coaxial cable.

It is recommended to choose device-mounting place according to the best signal reception by the alarm receiver. Signal reception level is determined by the alarm receiver indication level (see alarm receiver description). When mounting object device, it is important to keep in mind the following aspects:

- Wires connecting object device and battery should be the minimum length
  - Wires, that lead to the object device terminal board shouldn't lie near antenna, and never should be laid lengthwise it
- When using "dipole" type antenna, cable connected to it should be laid athwart it for at least 1m lengths

## Working in control panel mode

In this mode device controls the status of all it's inputs according to security state "ARMED" or "DISARMED".

You can also connect **TMR-20** touch memory key reader to the device.

In "DISARMED" state module every zone status is monitored, but transmitted only status change on the 24H zone. Status change on other inputs are ignored (excluding status input).

In "ARMED" state module transmits any input status change (according to input configuration and it's activation sequence).

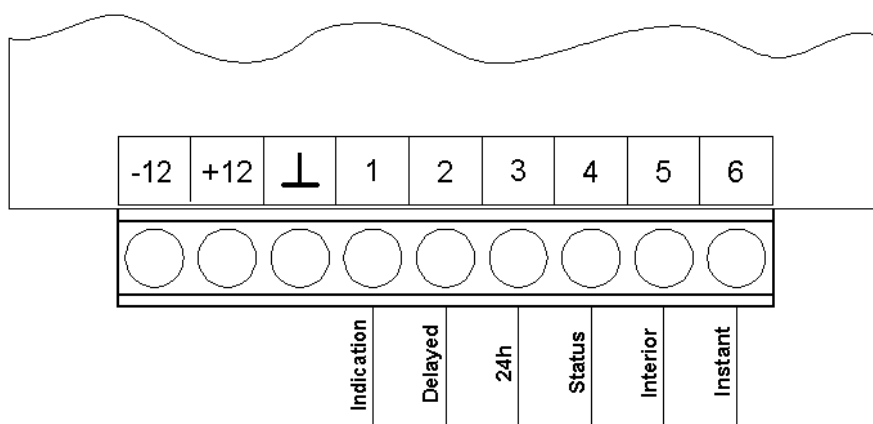
## transmitter zone configuration

All transmitter zones are strictly loaded on «+», therefore they react to "ground"/"break" signals.

All transmitter zone functions are preprogrammed and cannot be changed.

Zones are configured in the following way (see Pic.3):

- 1-st input: **Indication**. Indication input. You can connect to it either "+" of the status LED or **TMR-20** touch memory key reader IND output.
- 2-nd input: **Delayed**. Has entry and exit delays and is usually used for the main door. exit delay is started when device is armed. During exit delay this zone can be opened and closed without triggering the alarm. Status LED will blink green with 1 sec. interval. If the zone is opened after exit delay has expired - entry delay will start. During entry delay status LED blinks green fast (when using TMR-20). If you disarm the system before the delay expires - no alarm signal will be transmitted. Entry and exit delay can be programmed to work for the time you need.
- 3-rd input: **24h**. Activates and triggers the alarm either if system is armed or disarmed.
- 4-th input: **Status**. determines system functioning mode (armed/disarmed). Transmitter is armed or disarmed when status input is connected to "ground" for at least 1 second. You can connect to it either "+" of the status button or **TMR-20** touch memory key reader IND output ST output.
- 5-th input: **Interior**. After delayed zone triggering, interior zone works as delayed. If there was no delayed zone activation - it works as Instant.
- 6-th input: **Instant**. Usually used for door and window SMK's and has a exit delay but will trigger immediately if exit delay has expired.



**Pic. 3.**

Before the area will be armed, you'll have to close all protected doors, windows and stop movement within the sensitivity limits of movement sensors. If there were alarm in one or more zones, the reading device indication LED will not be on. Transmitter can be armed only if indication LED is green i.e. all zones are in the normal status. Panel arming is made by short contact (approximately 1sec.) one of users electronic keys with the reading device. As a result of it, the exit delay during which you can leave protected territory is started, not causing the alarm. The exit delay is followed by blinking of the green indication LED and sound signal (if buzzer is connected to TMR-20). After an exit delay the panel will be "ARMED" (LED blinking once per 4 seconds) and will transmit the message to the central board. If during an exit delay one more short contact (approximately 1сек) of one of the user keys with the reading device will be made the panel will return to a "DISARMED" mode, nothing will be sent to the central station (color of the indication diode becomes green if no zones are alarmed, or the indication diode will go out if one or more zones alarmed).

## Disarming

At the object intruding, the "Delay" zone sensor is responding first.

At the time of it's responding, the enter delay is started. Delay is followed by the indication diode fast green blinking and sound signal(if buzzer is connected to TMR-20).

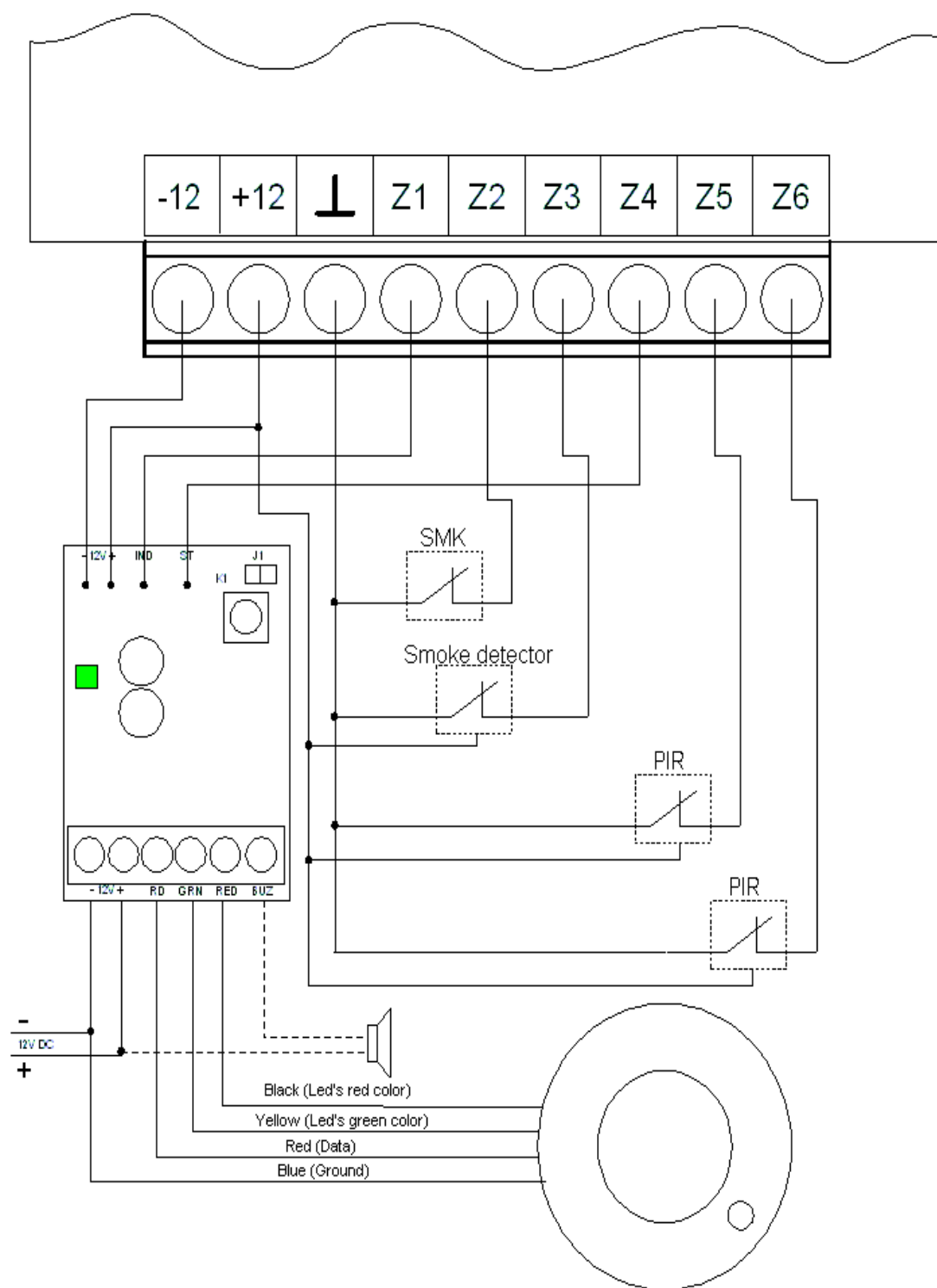
You should disarm the object (make a short (approximately 1s.) Touch Memory key touch with the reading device) before the entry delay time will pass, in that case the disarming report will be send to the alarm receiver (indication diode color will be green if no zones are active, and off if one or more zones are active). In other case it will be an alarm message .

## TMR-20 connecting to the transmitter

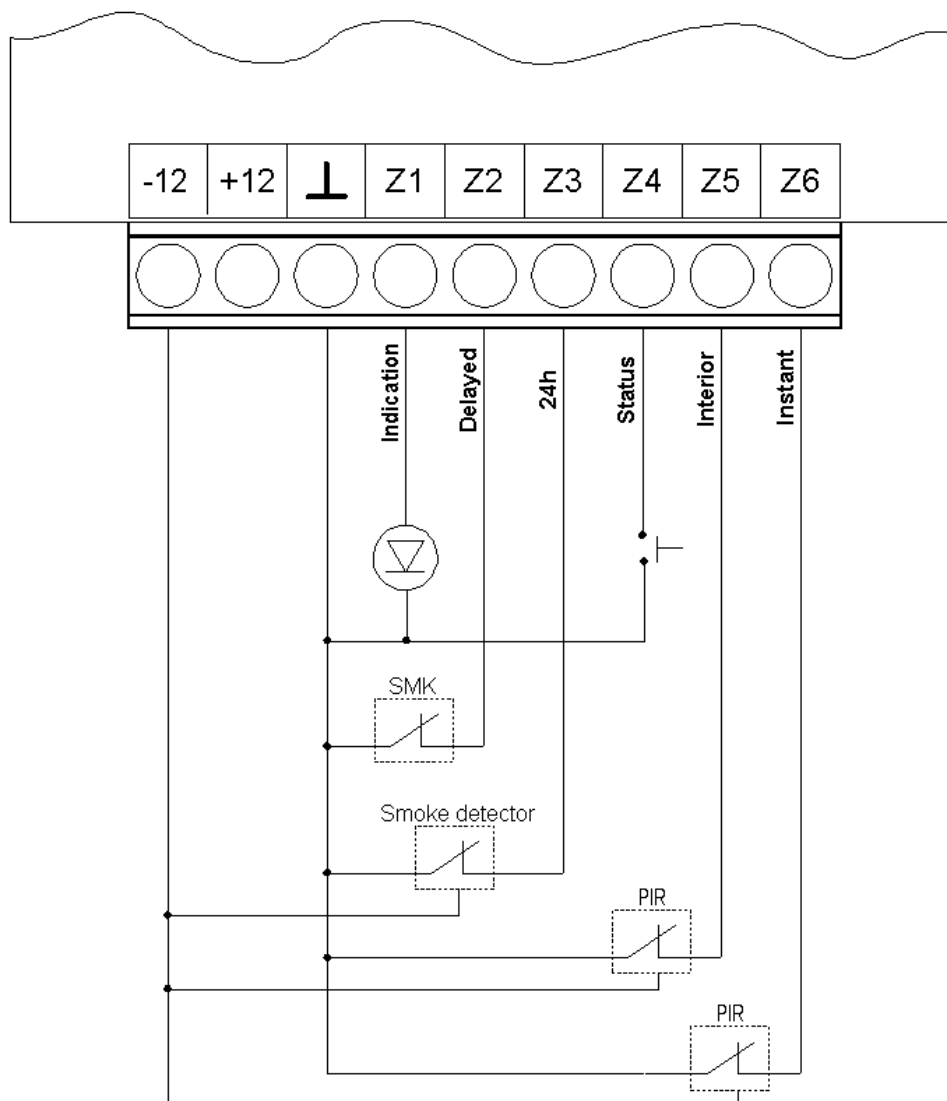
If you want to use "Dallas Semiconductors" touch memory keys to arm and disarm **RT4-5se** you should use **TMR-20** device. Wiring scheme is shown on the Pic.4.

**Attention:** When connecting **TMR-20** to the **RT4-5se** transmitter, **J1** jumper on the **TMR-20** device **must be put on!**

You can also arm and disarm transmitter without using **TMR-20**. In that case you should connect an indication LED to the first input, and NO button to the 4-th input. Wiring scheme is shown in Pic.5.



**Pic.4 TMR-20 wiring**



Pic.5

## Touch memory key registration

If you are using **TMR-20** then you will have to have a master-key. Master-key is a key that touched the reading device first.

Registering Master key: touch the reading device with master-key (for 1 second) – indication LED will turn red for 2 seconds. Key is registered.

### User key registering:

Touch the reading device with master-key - device will go to key-registering mode (indication LED blinks red for 10 sec). If during this time you will press K1 button on the TMR-20 device for 1 sec. then all previously registered user keys will be deleted. After 10 seconds device will go to key-adding mode and LED will constantly glow red. To add a user-key just touch reading device with it. After successful key registration LED will blink. Maximum number of keys - 20.

To exit key registration mode just touch the reading device with master-key one more time.

👉 **Attention!** If during power activating K1 button is pressed then all the keys including master-key will be deleted.