

Radio channel repeater

RRT1

Data sheet

Device ID

1. Device description

The radio channel repeater RRT1 is intended for retransmitting signals between radio channel control panels Contact and radio channel devices developed by "Ritm".

It is designed to increase transmission range of radio signals from the devices.

It is used in case of poor signals. The repeater does not increase the number of wireless areas, defined by the control panel.

It uses both-way radio channel which provides guaranteed message delivery.

It has 1 wire input loop (NC-type) for connection wired sensors.

2. Manufacturer

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3. Package content

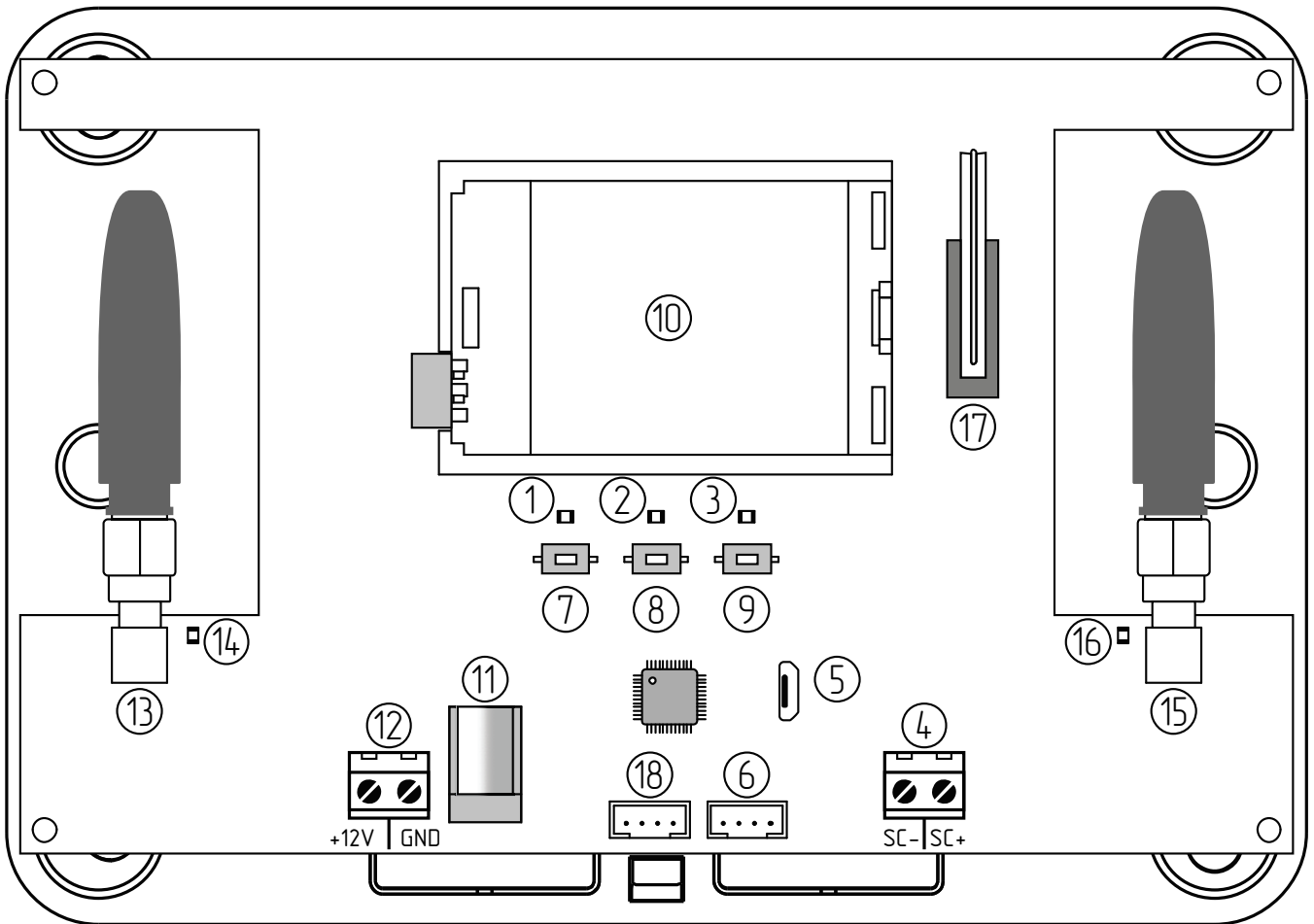
Radio channel repeater RRT1	1 pc.
Helical antenna	2 pc.
Battery BL-5C	1 pc.
AC adapter 220/9 V	1 pc.
Fixing set	1
Data sheet	1 pc.
Package	1 pc.

4. Specifications

Parameter		Value
Frequency range, MHz		433.075 – 434.775
Number of channels in the range, pc.		7
Antenna type		Helical
Antenna connector		SMA
Maximum receiver emitting power, mW		10
Maximum range of stable communication line-of-sight conditions, m		800
Minimum control period of repeater operation in the radio system, min		1
Maximum number of radio devices, pc.		up to 31 depends on panel
Wired loop connector		1 NC dry contact
Enclosure control tamper		+
Configuration via cable MicroUSB		+
Configuration via special communication cable USB1 or USB2		+
Supply voltage, V	Adapter	Input 220±15%. Output 9±15%
	External source	12±15%
	Battery	3.7±15%
Maximum useful current, mA	Power supply 9 V	350
	Power supply 12 V	260
Back-up power source		Battery BL-5C
Operating time with backup power source, h		Up to 24 ¹
Low battery warning		+
Life cycle, years, up to		10
Dimensions, mm		170×120×40
Weight, g, up to		220
Operating temperature range without battery, °C		-30... +50
Operating temperature range with battery, °C		0... +40

¹ Depends on operation conditions. In case of sub-zero temperatures the operating time is essentially decreased.

5. Design



Picture 1 – Layout

Nº	Designation
1	Visual indicator 1.
2	Visual indicator 2.
3	Visual indicator 3.
4	Wired loop connector (NC dry contact).
5	MicroUSB connector.
6, 18	Special cable connector for communication with PC USB1 or USB2.
7	Button 1.
8	Button 2.
9	Button 3.
10	Place for battery BL-5C.
11	220/0 V AC adapter connector.
12	12 V power source connector.
13, 15	Connector for SMA-antenna.
14	Visual indicator of control panel data exchange.
16	Visual indicator of devices data exchange.
17	Tamper.

6. Operation modes

Repeater operation mode is set with the buttons 1-3.

Short pressing (SP) is less than 3 seconds. Long pressing (LP) is more than 6 seconds.

Table 1. Repeater operation modes.

Button	Operation mode
No pressing	Work mode.
Button 1 SP	Mode for adding wireless devices to the control panel.
Button 2 SP	Mode for adding to the radio system a control panel as a wireless device.
Button 3 SP	Mode for adding wireless devices to the repeater.
Button 1 LP	Mode for resetting radio system.
Button 2 LP	Mode for copying control panel radio system settings (without adding as a wireless device). Note that data are retransmitted, but repeater state (tamper, sensor alarm, battery state) couldn't be retrieved.
Button 3 LP	Mode for deleting sensors from the repeater memory.

7. Indication

Indicators 1, 2 and 3 show current repeater operation mode.

Indicators 14 and 16 show data transmitting through radio channel.

Table 2. Indicator designation

Indicator	State	Value
1, 2 and 3	Not flash	Work mode.
1	Blinks	Mode for adding wireless devices to the control panel.
	Flashes	Mode for resetting radio system settings.
2	Blinks	Mode for adding to the radio system a control panel as a wireless device.
	Flashes	Mode for copying control panel radio system settings.
3	Blinks	Mode for adding wireless devices to the repeater
	Flashes	Mode for deleting sensors from the repeater memory.
14	Blinks	Data exchange between repeater and control panel.
	Not flashes	No data exchange between repeater and panel.
16	Blinks	Data exchange between repeater and wireless devices.
	Not flashes	No data exchange between repeater and wireless devices.

8. Setting-up procedures



Before starting to operate the repeater read the Operating manual.

Releasing the repeater (designations are shown in brackets on the picture 1):

- 9.1. Preselect the appropriate place for installation at a height of minimum 2 meters from the floor. The selected place should be away from massive metallic objects and radio signal sources. Minimum distance to the receiver should be more than 1 meter. Mount the fixing.
- 9.2. Open the enclosure.
- 9.3. Connect antennas (13 and 15).
- 9.4. Install the back-up power source (10).
- 9.5. Connect the AC adapter (11) and the power source (12).
- 9.6. If control of normally closed wired sensor is required, remove the resistor from the connector and connect to it the sensor (4).
- 9.7. Create in the control panel a new radio system if wireless devices have not been connected to the panel earlier. Otherwise remove from the control panel radio system those wireless devices that will be working through the radio channel repeater RRT1.
- 9.8. Connect the repeater with the control panel. To do this switch the control panel to the mode for adding radio devices and add the repeater by short pressing the Button 2 (8). While adding the indicator 2 is blinking. If the repeater is unable to find the panel radio channel within more than 2 minutes, it switches to the work mode.
- 9.9. Connect the sensor to the repeater: switch the wireless device to the mode for adding and short press the Button 3 on the repeater (9). The indicator 3 starts to blink until switching from the mode for adding. Using wireless device indication ensure that the adding was successful. If within 2 minutes the repeater cannot find the radio channel of the added wireless device, it switches to the work mode.
- 9.10. Switch the sensor to the standby mode.
- 9.11. Repeat steps 9.9 and 9.10 to add all sensors which should be transmitted to the control panel through the repeater.
- 9.12. Connect the retransmitted sensor to the control panel: switch the control panel to the mode for adding radio devices and press the Button 1 (7). The indicator 1 blinks until all data about added sensors are transmitted to the panel. If within 2 minutes the radio channel couldn't be found, the repeater switches to the work mode.
- 9.13. Close the enclosure.
- 9.14. Install the repeater to the pre-prepared place.

Details about mounting and configuring repeater see in the Operating manual available on the website of the Ritm company.

To get more details about successful adding sensors use the repeater configuration software.

9. Maintenance

On a regular basis but at least twice a year check safety of contacts and if necessary dress bonding pads.

Change back-up battery as and when necessary.

10. Safety measures

All works related to installation, configuration and maintenance of the repeater should be performed in accordance with the Electrical installation code and by qualified personnel.

The repeater is a safe device, the maximum power supply voltage level is 12 V.

11. Transportation and storage

The repeater should be transported in a package, in closed vehicles. Storage areas should be free from current-conducting dust, acid and alkali fumes as well as active gases able to corrode isolation.

While storing the battery should be charged and removed from the socket (10).

12. Manufacturer warranty

The manufacturer warrants conformity of the repeater to the specification requirements provided the transportation, storage, mounting and operation conditions are observed by the consumer.

Warranty operating life – 18 months from the date of commissioning, but no more than 24 months from the date of manufacture.

Warranty shelf life – 12 months from the date of manufacture.

The warranty does not cover battery.

The manufacturer reserves the right to make changes, not deteriorated of repeater functionality without previous notice of consumers.

13. Reclamation details

In case of repeater failure or defect in the warranty period take a fault report stating the date of device manufacture and commissioning, nature of a defect and send it to the purchase address or to the manufacturer.

Notes