

**Magnetic wireless sensor**

**RDD1**

**Data sheet**

**Device identification number**

## 1. General Information

The RDD1 radio channel magnetic contact sensor (hereinafter referred to as the device) is designed to be used as an opening sensor. The device generates alarm signals for sensors, additional ribbon cables, enclosure break-in, and transmits them to the control panel. In case of working in common with radio channel receiver RDK1 upon receiving of these signals the state of the outputs of type “dry contact”, located on the receiver board, is changing. In case of working in common with security and fire panels upon receiving of a message from the device, the panel generates an alarm.

## 2. Manufacturer

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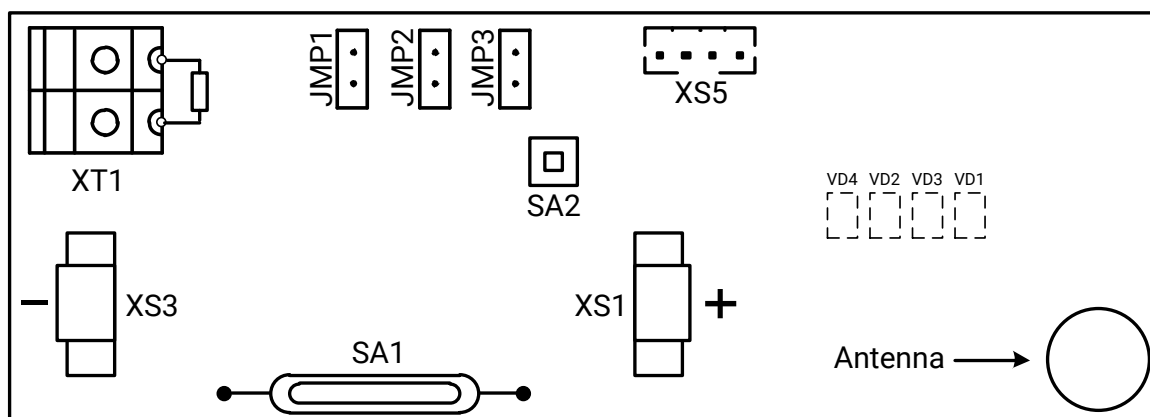
## 3. Package Contents

Magnetic wireless sensor RDD1	1 pc
N35-6-25 magnet in enclosure	1 pc
Magnet backing plate	3 pcs
2 mm jumper	2 pcs
AA ER14505 3.6B battery	1 pc
MF-25 0.25 W 270 $\Omega$ resistor	1 pc
Fastening kit	1 pc
Data sheet	1 pc
Packaging	1 pc

## 4. Technical Specifications

Parameter	Value
Communication channels band, MHz	433.075–434.775
Number of communication channels	7
Transmitter radiated power, mW	not exceeding 10
Reed relay gap (in between magnet), not exceeding, mm	10
Monitoring period of device operation in radio system, min	4
Signal encryption in communication channel	Yes
Maximum distance for strong signal, line-of-sight, m	up to 1200
Enclosure break-in tamper	Yes
Surface tear-off tamper	Yes
Normal state setup for additional wire loop	Yes
Radio system configuration w/o personal computer	Yes
Battery type	Li battery 3.6 V
Standalone operation time from one battery, yrs	up to 3 <sup>1</sup>
Dimensions, mm	29×101×38
Weight, g	63
Operating temperature range <sup>2</sup> , °C	-30...+55

## 5. Designation of Elements



Element	Designation
<b>XT1</b>	Connector for alarm additional wire loop. This connector may be connected to auxiliary ribbon cable of 'dry contact' alarm. Using firmware version "RDD1.001.002" allows wire loop normal state setup (NC or NO). When using previous versions of firmware wire loop state will be always NC.
<b>SA1</b>	Reed relay
<b>SA2</b>	Tamper button
<b>XS1, XS3</b>	Battery holders
<b>XS5</b>	Connector for cable for connection with computer. Used to configure and change the firmware from the PC

<sup>1</sup> The stand-alone operation time is directly related to the operating conditions.

<sup>2</sup> Without regard to battery characteristics.

<b>JMP1...3</b>	Jumpers for changing operating modes. Should be installed with the battery <b>removed</b> . Designation of jumpers is described in Paragraph 6.
<b>VD1, VD2, VD3, VD4</b>	Indicators on the back of the RDD1 board. LEDs <b>VD1</b> and <b>VD2</b> are green and always operate synchronously. LEDs <b>VD3</b> and <b>VD4</b> are red and always operate synchronously.

## 6. Designation of Jumpers

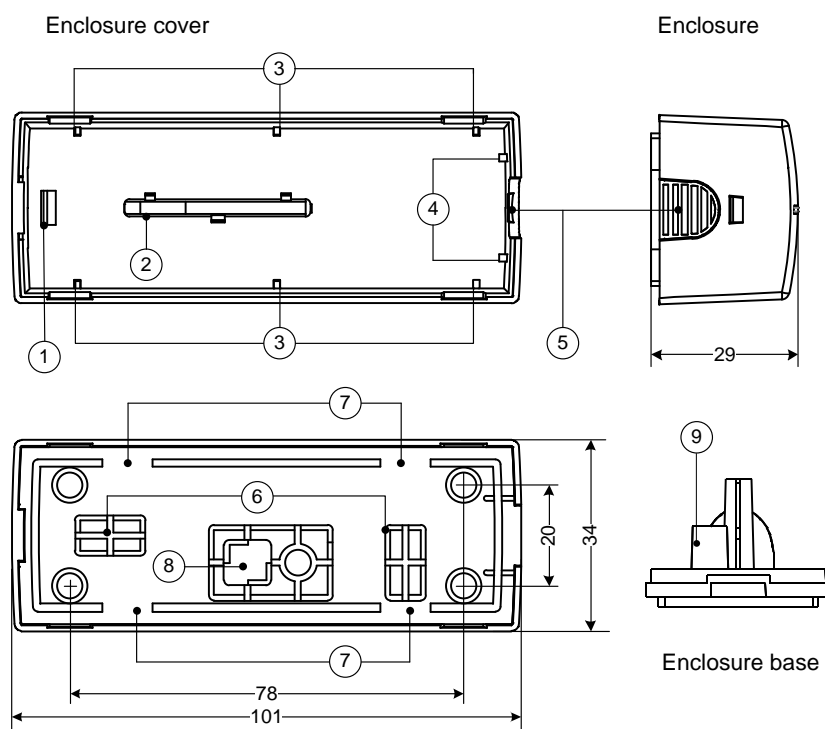
To change a device's operating mode, remove its battery, install (remove) necessary jumpers, and place the battery back respecting its polarity.

<b>Installed Jumpers</b>	<b>Operating Mode</b>
JMP1	Mode of addition to radio system
JMP2	Firmware change mode
JMP3	Radio channel test mode
JMP1 + JMP3	Configuration hardware reset mode
All jumpers removed	Standby mode

## 7. Visual Indication

<b>Standby mode</b>		
<b>Red</b>	Blinks very fast	The device not added to radio system
<b>Green/Red</b>	Alternating once per second	Tamper is open
<b>Red</b>	Blinks 1 time	The device got a receipt that sent a disturbing signal is accepted
<b>Red</b>	Blinks 2 times each 5 s	Battery depleted
<b>Firmware change mode</b>		
<b>Green+Red (Yellow)</b>	Always on	Device ready to be connected to PC or the software update is complete
<b>Green</b>	On	Software update is in progress
<b>Radio channel test mode</b>		
<b>Green</b>	Blinks 1 time	The device sent a test message
<b>Red</b>	Blinks 1 time	The device got the answer
<b>Red</b>	Blinks very fast	The device not added to radio system
<b>Mode of addition to radio system</b>		
<b>Red</b>	On	The device is switched to the mode for adding to a radio system
<b>Green</b>	Blinks	An active radio system is found. It is ready to add the device
<b>Green</b>	On	The device is successfully added to the radio system
<b>Configuration hardware reset mode</b>		
<b>Red</b>	Blinks 5 times	Getting ready for configuration reset
<b>Red</b>	On	Configuration reset to factory settings
<b>Faulty device</b>		
<b>Red</b>	Blinks 5 times after 3 s	Faulty device

## 8. Getting Ready for Operation and Adding to Radio System



8.1. Place a device on a fixed surface of a door or window opening at least 1 m from the receiving radio channel device. Install the mating piece to the window frame or door.

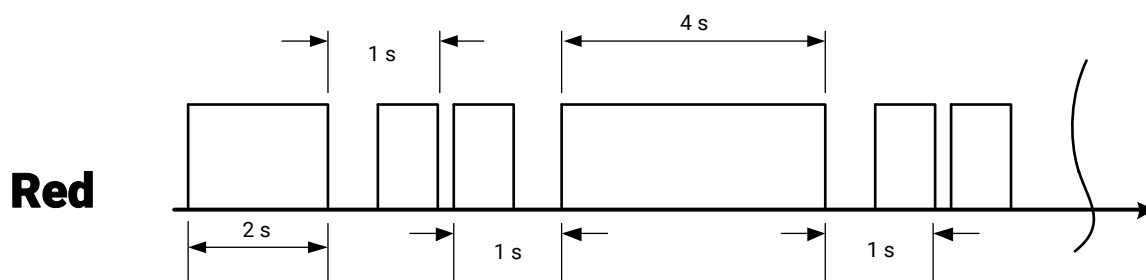


**Do not place the device in the vicinity of EMI sources, large metal objects and structures, power cable runs!**

8.2. Recess the latch 5 and open the enclosure.

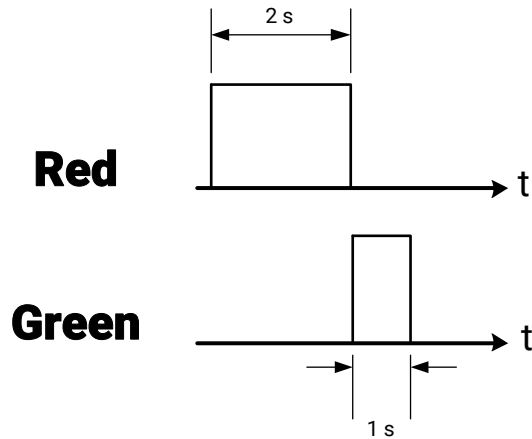
8.3. Install a battery.

8.4. Close the cover, the device will go into the battery test mode: the indicator will glow in red for 2 seconds. If the battery had not been in use for a long time, it depassivates. The indicator lights up in series of red flashes illustrated in the figure below up until the moment the battery goes into the normal operating mode. If a battery stays in the depassivation mode for longer than 15 minutes, it is recommended to replace it.

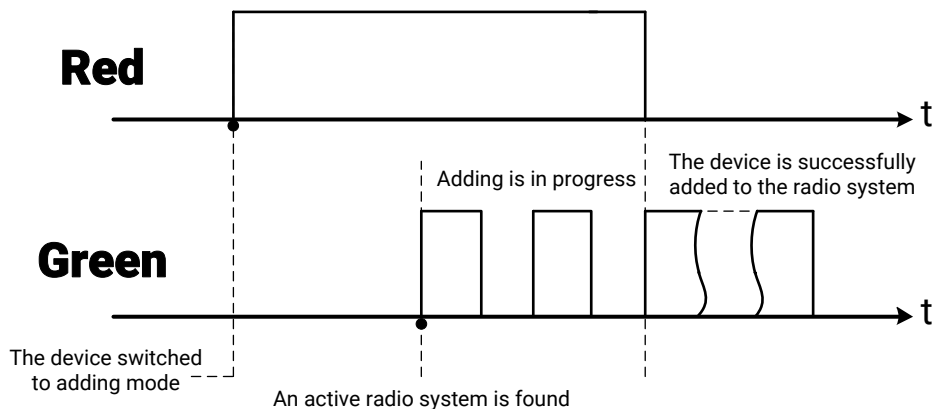


After testing a battery (the battery now operates at its normal voltage), the indicator will glow up in red for 4 seconds, and then in green for 1 second.

If the depassivation has not been performed, the red indicator glows in red for 2 seconds, and then in green for 1 second.



- 8.5. Using a screwdriver pull the latch 1 and remove the device board.
- 8.6. Switch the device to the mode of addition to a radio system (see Paragraph 6). Add the device to the control panel radio system according to the radio system instruction. The distance between the device and the receiver should be at least 1 m. The device then receives settings from the control panel. The addition process is illustrated in the diagram:



- 8.7. Switch the device to the radio channel test mode (see Paragraph 6).
- 8.8. Make sure the message exchange quality is strong in the supposed installation location by referring to LED indicators. 2–3 missed responses are OK for 10 transmitted messages.
- 8.9. If an additional alarm wire loop is used, remove any cap 6, insert the ribbon cable and connect it to the XT1, removing the resistor 270  $\Omega$ .
- 8.10. Put corresponding wires in slots 7 and secure the enclosure base on the surface. If an enclosure tear-off tamper needs working, fix the plate 8 with a screw.
- 8.11. Switch the device to the standby mode (see Paragraph 6).
- 8.12. Verify the signal path for alarm signals of the sensor, tamper, and, if necessary, additional alarm wire loop by referring to LED indicators.
- 8.13. Get the edge of RDD1 board under stops 4 and place it on stops 3 so that the LEDs VD1...VD4 were turned to the light guide 2 on the enclosure. Fix the board with the latch 1.
- 8.14. Install the enclosure cover to the base and secure it with the latch 5. Verify that tamper button SA2 formed on the stop button 9.

8.15. Install the mate (the magnet) at a distance of not more than 10 mm from the reed relay SA1.

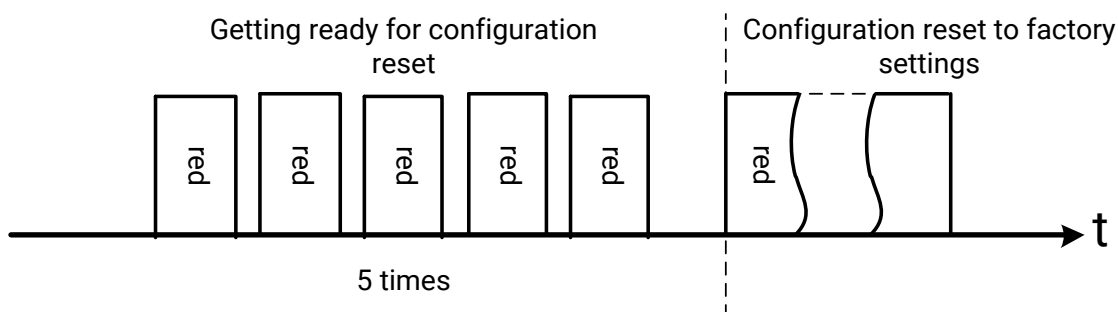
8.16. The device is ready for operation.



The radio signal strength between the device and the control panel is determined by the level of signal attenuation, which can be seen in the radio channel security and control panel configuration software, page Radio Device Map. For more information please refer to the control panel user manual.

## 9. Hardware Reset to Factory Settings

Remove the battery from its holder, install the JMP1+JMP3 jumpers, and place the battery back. This procedure is shown in the diagram:



## 10. Firmware changing and configuring

10.1. Remove the battery from its holder.

10.2. Install the JMP2 jumper.

10.3. Place the battery back.

10.4. All LEDs will illuminate with a constant glow.

10.5. Connect the cable for programming USB1 or USB2 to XS5.

10.6. Run the "Reinstall Sensors v.2.0.0.30" program<sup>3</sup>.

10.7. For configuring the additional alarm wire loop run the additional alarm wire loop configuring program RDD 1.0.0.2 (for firmware RDD.001.002).<sup>3</sup>

## 11. Transportation and Storage

The device should be transported in packaging in closed vehicles. Storage premises should be free of current-conducting dust, acid and alkaline fumes, corrosive gases and gases harmful to insulation.

## 12. Maintenance and Safety Measures

All setup and maintenance activities applied to the device should be performed by duly qualified personnel.

<sup>3</sup> <http://www.ritm.ru/en/downloads/>

### **13. Manufacturer's Warranties**

The manufacturer guarantees that the device complies to requirements of the technical specifications, provided the client ensures compliances to conditions of transportation, storage, installation and operation.

Although **the warranty period** is 12 months from the commissioning date, it may not exceed 18 months from the production date.

**The warranty storage period** is 6 months from the production date.

The warranty does not cover the battery.

The manufacturer reserves the right for modification of the device in any way that does not degrade its functional characteristics without prior notice.

### **14. Information on Claims**

In case of a device failure or defect during the warranty period, please fill in a malfunction report specifying the dates of issue and commissioning of the device and nature of the defect and submit it to the manufacturer.