RiDom

Dual-channel opening detector «Ri-DO-2»

Installation guide

1 GENERAL INFORMATION

1.1 The dual-channel opening detector «Ri-DO-2» (hereinafter referred to as the Detector) monitors the attempts to open or displace doors, windows and other structural elements and transmits notifications via a two-way radio channel in accordance with the protocol «Ri-Contact-R».

1.2 The Detector works as part of the RiDom smart home protection system, communicating with the «Ri-HUB-1» control center (hereinafter referred to as the Hub), which supports the «Ri-Contact-R» radio channel exchange protocol.

1.3 Detection of opening or displacement is done by monitoring the state of the built-in reed switch. The Detector has terminal contacts for connecting external displacement sensors of the protected structure (hereinafter referred to as SDS).

1.4 The Detector does not require licensing or registration of a radio frequency device.

1.5 Two radio frequencies are used in order to exchange radio signals between the Detector and the Hub – the main and the backup. The transition to the backup frequency is automatic.

1.6 The Detector is a two-zone sensor that has the ability to connect two SDSs to lines G1 and G2.

The built-in reed switch and line G1 are combined into one control zone, the operating logic of which is set by jumper XP2 (see paragraph 9).

1.7 The Detector status is indicated by two-color LED and sound indicators.

1.8 The Detector generates and transmits of the following notifications via radio channe:

- «Normal» – when the built-in reed switch is closed and the resistance in lines G1 and G2 is from 3.6 to 6.5 kOhm;
- «Zone 1 alarm» – when the built-in reed switch is open or the resistance in the G1 line is less than 3.4 or more than 6.9 kOhm;
- «Zone 2 alarm» – when the resistance in line G2 is less than 3.4 or more than 6.9 kOhm;
- «Opening» – when the case is opened or the Detector is removed from the mounting surface;
- «Discharge of the main battery» – when the main battery voltage drops below 2.2-0.2 V;
- «Discharge of the backup battery» – when the backup voltage decreases batteries below 2.2-0.2 V.

1.9 The Detector is designed for continuous round-the-clock operation.

1.10 The Detector is resistant to electromagnetic interference.

2 SPECIFICATIONS

Table 1

Parameter	Value
Frequency range	868,7...869,2 MHz
Radiation power, no more	25 mW
Distance between sensor and magnet: - to open the contacts of the reed switch - to close the contacts of the reed switch	 > 15 mm < 5 mm
Protection class	IP30
Battery type	CR123A, 1 pc. CR2450, 1 pc.
Duration of operation of the sensor with a set period of radio exchange of 60 seconds or more, normal climatic conditions and disabled indication, not less than: - from the main battery - from backup battery	 up to 10 years at least 2 months
Dimensions	112 x 41 x 32 mm
Weight	0,1 kg
Average service life	8 years
Operational conditions	
Operating temperature range	-20... +55 °C
Permissible air humidity at a temperature of +25 °C, without moisture condensation	Up to 98 %

3 SCOPE OF SUPPLY

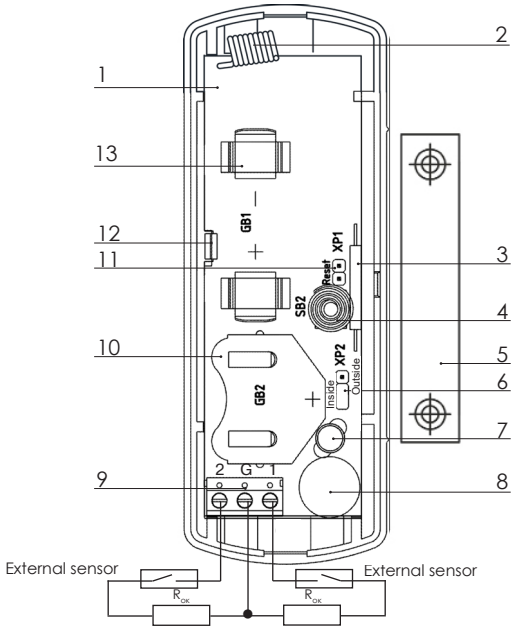
Table 2

Name	Qty.
Dual-channel opening detector «Ri-DO-2»	1 pc.
Security magnetic contact detector	2 pcs.
Resistor 5.1 kOhm 0.125 W	2 pcs.
Screw 3-3x30.016	10 pcs.
Lithium battery CR123A	1 pc.*
Lithium battery CR2450	1 pc.*
Installation guide for the «Ri-DO-2»	1 copy
* Included	

4 VIEW AND DESIGN

The Detector consists of a case and a printed circuit board. On the front side of the printed circuit board (1) there are: antenna (2), built-in reed switch (3), tamper switch (4), XP2 jumper (6), two-color LED indicator (7), sound indicator (8), terminal contacts block for connecting the SDS (9), backup battery holder (10), RESET contacts (11), main battery holder (13). The tamper switch is located on the back of the printed circuit board. The board is fixed to the base of the case with a latch (12).

To control the built-in reed switch, use the magnet (5) of the detector from the delivery kit. A mark on the side of the base of the case indicates the place opposite which the magnet should be placed.



Picture 1 – Top view with removed cover

5 CHOOSING THE PLACE OF INSTALLATION

5.1 The Detector is intended for indoor installation only.

5.2 Place detector so that the built-in reed switch is on the side where magnet will be located.

5.3 It is not recommended to install the Detector on metal surfaces. The distance from the Detector or magnet to the magnetically conductive material must be at least 25 mm.

5.4 At any permissible positions of the controlled structure, the Detector and magnet should not experience mechanical influences (compression, shock, etc.).

DO NOT install the Detector if the following cases:

1. In close proximity to electrical wiring.
2. Outdoors.
3. In areas with temperature and humidity beyond the permissible limits.

6 CONNECTING THE DETECTOR TO THE SYSTEM

6.1 Open the RiDom application and click + in the My Devices tab. Then press **Add device** button. Select the «Ri-DO-2» sensor from the list of devices and follow the prompts in the application.

6.2 When prompted by the application, remove the battery isolator.

6.3 The Detector will periodically turn on the green LED, that indicates that it is in the «Linking» mode.

6.4 Upon successful connection to the Hub, the indicator on the Detector will turn red for 2-3 seconds, then you can see the Detector in the application, as well as all the data about the sensor. Link mode time is limited to 100 seconds. To resume the «Linking» mode, it is necessary to briefly close the «RESET» contacts.

6.5 Put the case cover back.

7 INDICATION

The Detector generates the following types of indication:

- indication of the «Linking» mode (registration of the Detector in the Hub);
- indication «Identification» turns on upon the receipt of the appropriate command from the Hub and remains active for 15 minutes or until the case is opened;
- indication of the Detector status – turns on and is saved in the first 15 minutes after closing the case in the absence of other types of indication, provided that during this time an «Opening» notification is not generated or a command from the Hub is not transmitted to prohibit the indication.

The LED indicating modes are shown in Table 3.

Table 3

LED status	Indication	Notes
Completion of «Linking» mode	Turns on the red indicator for 2–3 seconds	
«Linking» mode	Periodic turning on of the green indicator	Registering a Detector in the hub
«Identification»	Alternately turning on the indicator red and green indicators	The corresponding command has been received from the Hub
«Alarm zone 1» «Alarm zone 2»	The red indicator turns on once with a period of 4 seconds*	Status indication is on and «Identification» indication is off
Generating «Alarm zone 1» «Alarm zone 2»	Turning on the sound indicator twice**	Audio status indication enabled
Recovery after «Alarm zone 1» «Alarm zone 2»	One-time activation of the sound indicator**	
Connection quality	See the section «Assessing the quality of communication»	
«Normal»	Off	

* Light indication of detector status
** Sound indication of detector status

8 ASSESSING THE QUALITY OF COMMUNICATION

8.1 The following is required to be done to assess the quality of radio communication between the Detector and the Hub:

- place the Detector in the intended place of installation;
- press and then release the tamper switch on the case.

8.2 When the tamper switch is released, the Detector generates a notification about the housing opening, transmits it via a radio channel and displays the quality of radio communication with the Hub in accordance with Table 4.

Table 4 – Connection quality assessment indication

Indication		Connection quality	Recommendations
Color	Mode		
Green	Three blinks	Perfect	Installation in this location is allowed
Green	Two blinks	Good	
Green	One blink	Weak	Choose a different installation location or use a repeater
Red	Multiple blinks	No connection	

9 OPERATION FEATURES

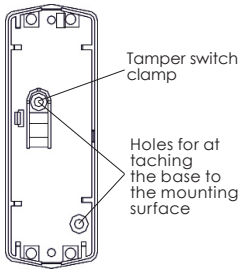
9.1 The built-in reed switch can be disabled by setting jumper XP2 to the OUTSIDE position.

9.2 G1 line monitoring can be disabled by setting jumper XP2 to the INSIDE position. In this case, nothing should be connected to line G1.

10 INSTALLATION

10.1 Select a location for installing the Detector and mark the place for mounting. A base can be used for marking (Picture 2). Secure the base with screws. To monitor the separation from the wall, make sure to screw the screw into the clamp of the tamper switch.

10.2 Install the printed circuit board, connect the wires of the controlled lines to the terminal blocks (9) and close the cover. The length of the lines should not exceed 5 m. At the ends of the lines, install terminating resistors with a nominal value of 5.1 kOhm. Connections should be made by soldering or screwing.



Picture 2 – Case base

11 STORAGE AND TRANSPORTATION

11.1 The Detectors in their original packaging are resistant to:

- transport jolting with the acceleration up to 30 m/sec^2 at impact frequency range from 10 to 120 per minute or 15 000 strikes;
- ambient temperature range minus 50 ... +55 °C;
- relative air humidity (95 ± 3) % at a temperature +35 °C.

11.2 The Detectors in original package may be transported by any means of transportation in closed vehicles over any distances in compliance with the existing shipping rules concerning the respective means of transportation.

11.3 After transportation under the conditions different to exploitation conditions the Detectors shall be ready to operate after a maximum of six hours.

11.4 During storage period lithium batteries should be removed from the holders or isolators should be installed.

Note – The storage premises should not contain any current-conductingdust, acid and alkali fumes, or corrosive or destroying insulation gases.

12 DISPOSAL INFORMATION

12.1 The Detector does not contain precious metals, hazardous or toxic substances that can harm human health or the environment, and does not pose a danger to life, human health and the environment at the end of its service life.

12.2 In this regard, the disposal of the Detector can be carried out according to the rules for the disposal of general industrial waste.

13 MANUFACTURER WARRANTY

13.1 LLC NPP RIELTA guarantees that the Detector meets the requirements of technical specifications within 39 months from the date of manufacture, subject to the conditions of transportation, storage, installation and operation.

13.2 Warranty period of operation of the Detector is 36 months from the date of commissioning within the warranty period of storage.

13.3 If during the warranty period the Detector, which is subject to the rules of transportation, installation and operation, is found to be inconsistent with the requirements of the technical specifications, it is to be replaced or repaired by the manufacturer.

14 DATE OF MANUFACTURE

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month, year

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Made in Russia

v12.2R

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