



RiDom

Smoke detector «Ri-SD-1»



Installation guide

1 GENERAL INFORMATION

1.1 The «Ri-SD-1» smoke detector (hereinafter referred to as the «Detector») plays the important role the RiDom smart home security system detecting smoke, which precedes the fire and transmits a «Fire» alarm via a two-way radio channel in accordance with the «Ri-Contact-R» protocol.

1.2 The sensor works as part of the RiDom Smart home security 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.

The principle of operation of the Detector is based on the processing of optical radiation reflected from smoke particles.

1.3 The Detector does not require any permission and registration for operation as the radio frequency device.

1.4 The Detector compensates for the dust content of the optical chamber and generates a dust notification when the dust compensation limit is reached.

1.5 The Detector generates and ensures the transmission of the following notifications over the radio channel:

- the «normal status in the absence of other notices»;
- «opening» when the Detector is removed from the socket»;
- «malfunction» if the Detector circuit fails or if the sensitivity decreases by more than 2.5 times»;
- «main power failure» when the power supply voltage drops below 2.5 ± 0.2 V during the next communication session»;
- «backup power failure» when the backup power supply voltage drops below 2.4 ± 0.2 V during the next communication session»;
- «dust saturation in the optical chamber» when the limit of dust compensation is reached»;
- «Linking» mode when registering the Detector in the system»;
- «Identification mode upon receipt of the appropriate command from the Hub»;
- «communication quality».

1.6 The radio exchange is initiated by the Detector with a period of 10, 15, 30, 60 seconds, 2, 5, 10 minutes. The frequency of radio sessions is set when configuring the Detector. Fire and unauthorized access notifications are transmitted immediately.

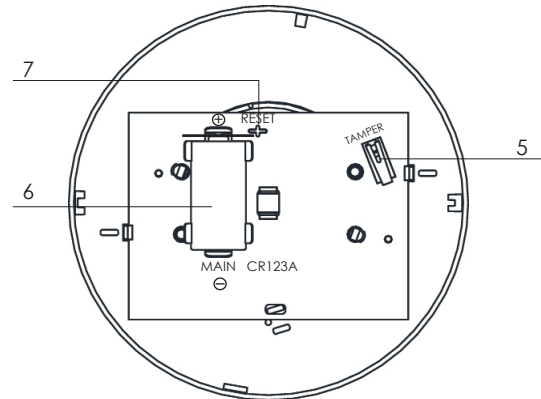
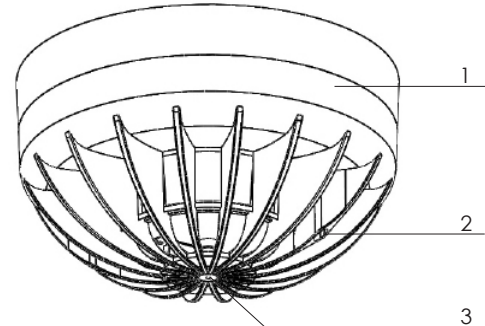
1.7 The Detector is designed for continuous round-the-clock operation.

4 VIEW AND DESIGN

The appearance of the sensor is shown in Figure 1. The sensor consists of a board with an optical camera installed in the housing (2), which is fixed on the base base (1).

On the housing (2) there are light indicators (3) and an opening (4) for inserting a reflector (needles, paper clips, wires with a thickness of no more than 1 mm), designed to check the operability of the sensor.

On the sensor board there are: tamper control tamper (5), lithium battery (6) with insulator, hole with metallized RESET contacts (7).



Picture 1 – «Ri-SD-1» view

5 INDICATION

Table 3

LED status	Indication
«Normal»	turning on the green LED once
«Linking»	every 15 seconds
«Fire»	intermittent green LED
«Connection quality»	periodic switching on of the red LED with a frequency of 1 Hz
«Identification»	see table 4
No connection with the Hub	turning on the red LED for 2 seconds

6 CHOOSING THE PLACE OF INSTALLATION

6.1 The Detector should be installed indoor only.

In any case the place of installation of the Detector should meet the following requirements:

- water can't get on the body of the Detector or leak from the side of the mounting surface»;
- vibration of building structures is minimal»;
- illumination is minimal»;
- distance from sources of electromagnetic interference and infrared radiation (thermal appliances) is maximal»;
- maximum convenient conditions for installing, checking and removing the sensor.

6.2 The transmission of radio signals in the conditions of each particular room can significantly vary, therefore, before the final installation of the Detector, it is recommended to evaluate the quality of communication.

DO NOT install the Detector if the following areas:

1. In close proximity to electrical wiring.
2. Near metal objects and mirrors that cause attenuation of the radio signal or shield it.
3. Outdoors.
4. In rooms with temperature and humidity outside the allowable.

2 SPECIFICATIONS

Table 1

Parameter	Value
Frequency range	868,7...869,2 MHz
Radiation power	25 mW
Sensitivity threshold	0,18 dB/m
Response inertia	< 5 seconds
Airing period	from 10 seconds to 10 minutes
Protection class	IP30
Battery type	CR123A, 1 pc
The duration of the sensor operation from one battery under normal climate conditions and with communication period of at least 60 s	Up to 10 years
Dimensions	Ø125x70
Weight	0,2 kg
Average service life	10 years
Operational conditions	
Operating temperature range	-20... +55 °C
Permissible air humidity at a temperature of +40°C, without moisture condensation	Up to 93 %

3 SCOPE OF SUPPLY

Table 2

Name	Qty
Smoke detector «Ri-SD-1»	1 pc.
Screw bolt 3-3x40.016	2 pcs.
Dowel NAT 5x25 SORMAT	2 pcs.
Lithium battery CR123A	1 pc.*
Installation guide for the «Ri-SD-1»	1 copy
* Included	

7 CONNECTION OF THE DETECTOR TO THE SYSTEM

7.1 Open the RiDom application and click **+** in the My Devices tab. Then press **Add device** button. Select the «Ri-SD-1» detector from the list of devices and follow the prompts in the application.

7.2 Detach the sensor base by turning its front side counterclockwise.

7.3 At the prompt in the application, remove the insulator.

7.4 The Detector will periodically turn on the green LED, which indicates that it is in the «Linking» mode. In the absence of the indication, close short the «Reset» contacts with a screwdriver for 2-3 seconds.

7.5 Upon successful connection to the Hub, the indicator on the sensor will turn red for 2-3 seconds, then you can see the Detector in the application, as well as all corresponding information about the connected Detector.

The linking mode time is limited to 100 seconds, after which the Detector goes into sleep mode. To resume the «Linking» mode it is necessary to briefly close the «Reset» contacts with a screwdriver for 2-3 seconds.

7.6 Insert the Detector into the base, lock by turning it clockwise.

Reminder - The Detector received from the factory is already set for the linking procedure and does not require additional contact closure.

8 PERFORMANCE CHECK

Through the hole (4), insert a reflector (needle, paper clip, wire no more than 1 mm thick) into the optical camera and hold it for at least 5 seconds, the indicator will periodically turn on in red. Make sure that the «Fire» notification in the appropriate area has been received and registered by the hub. A test aerosol can also be used for verification. To recover after the formation of the «Fire» notification, the sensor must receive the command «Take/Remove» in accordance with the protocol «Ri-Contact-R».

9 RADIO CONNECTION QUALITY ASSESSMENT

Before the installation of the Detector, it is advisable to check the quality of communication with the Hub:

- Place the Detector with the cover closed at the site of installation.
- Open the Detector case.

The Detector will indicate the quality of communication with the hub.

Table 4 - Indication of the communication quality control results

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

10 MAINTENANCE

10.1 Inspection of the Detector performance must be carried out at least once a year.

10.2 The Detector must be cleaned from dust when the Detector generates the «Fault» or «Dust saturation of the optical camera» notification. To do this, blow the optical chamber of the sensor from all sides with air pressure of 0,3-0,5 kg/cm². In order to prevent dusting of the optical chamber, depending on the operating conditions and based on statistical data, it is recommended to establish a schedule of periodic maintenance of all detectors included in the fire alarm system.

Attention! Do not leave the sensor on when disconnecting the hub for a long time. This will save battery life.

11 SAFETY MEASURES

11.1 When mounting and working with the Detector, one should be guided by the provisions of the «Safety Rules for the Operation of Consumer Electrical Installations».

11.2 All installation work must be carried out only with batteries removed.

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 STORAGE AND TRANSPORTATION

13.1 The Detector in the package should withstand the following conditions during transportation:

- transport shaking with an acceleration of 30 m/s² at a frequency of impacts from 10 to 120 per minute or 15,000 impacts with the same acceleration;

- ambient air temperature from minus 50 to +55 °C;

- relative air humidity 95±3% at temperature +35 °C.

13.2 The Detector in the shipping package of the manufacturer may be transported by any mode of transport in covered vehicles for any distance, in accordance with the rules for the carriage of goods for the respective modes of transport.

13.3 During the storage of the Detector, lithium batteries must be removed from the holders or the insulators must be installed.

13.4 The activation time of the Detector after transportation in conditions different from the operating conditions is at least 6 hours.

14 MANUFACTURER WARRANTY

14.1 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.

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

14.3 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.

Note - Lithium batteries are not covered by the warranty.

15 DATE OF MANUFACTURE

_____ month, year



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v13.1