



RiDom

Motion and Temperature Detector «Ri-MDT-1»



Installation guide

1 GENERAL INFORMATION

1.1 The motion and temperature detector «Ri-MDT-1» (hereinafter referred to as the Detector) is installed in secured objects to detect any unauthorized movement and transmit notifications via a two-way radio channel in accordance with the «Ri-Contact-R» protocol.

1.2 The Detector operates as part of the RiDom smart home security system and communicates with the «Ri-HUB-1» control panel (hereinafter referred to as the Hub) via the «Ri-Contact-R» protocol.

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

1.4 The Detector generates and transmits the following types of notifications via radio channel:

- normal status;
- alarm;
- case opened;
- low battery;
- working in the «Linking» mode;
- working in the «Identification» mode;
- communication quality.

1.5 Radio exchange is initiated by the Detector with a period of 10 s, 15 s, 30 s, 60 s, 2 min, 5 min, 10 min. The frequency of radio sessions is set when setting up the Detector. Notifications about alarms and opening of the case are transmitted immediately.

1.6 The Detector is designed for continuous 24/7 operation.

1.7 The pet immunity of the Detector ensures that there are no false alarms on moving animals with weight up to 40 kg.

1.8 The Detector is resistant to electromagnetic interference.

2 TECHNICAL FEATURES

The Detector has the following features:

- no distortion in the detection zone;
- pet immunity;
- protection against penetration of insects;
- possibility of switching pet immunity over the radio protocol;
- thermal compensation of detecting ability;
- automatic transition to a backup frequency in case of high noise interference conditions;
- transmission of temperature measurements over radio channel.

3 TECHNICAL CHARACTERISTICS

Table 1

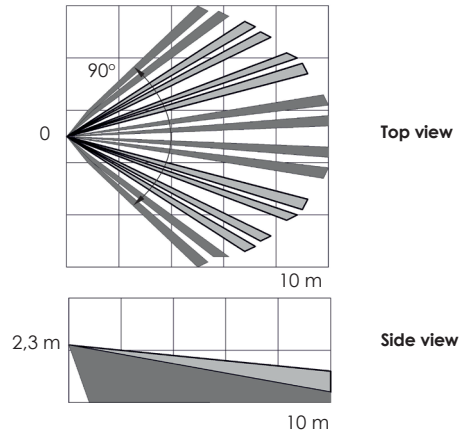
Parameter	Value
Frequency range	868,7...869,2 MHz
Radiation power	25 mW
Detection area	Volumetric
Maximum detection range	10 m
Recommended installation height	2,3 m
Resistant to pet movement	Up to 40 kg
Temperature measurement error	± 2,0 C°
Protection class	IP41
Battery type	CR123A CR2450L
Duration of operation of the Detector from a battery under normal climatic conditions, with the indication turned off and with a broadcast period of at least every 60 seconds	Up to 8 years
Dimensions	105x75x56 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	98 %

4 CONTENTS OF THE KIT

Table 2

Item	Qty
Motion and temperature detector «Ri-MDT-1»	1 pc
Lithium battery CR123A	1 pc*
Lithium battery CR2450L	1 pc*
Installation bracket	1 pc**
Motion and temperature detector Installation guide for the «Ri-MDT-1»	1 copy
* Installed	
** Supplied by request	

5 DETECTION ZONE DIAGRAM



Picture 1 – Detection zone diagram

6 DESIGN

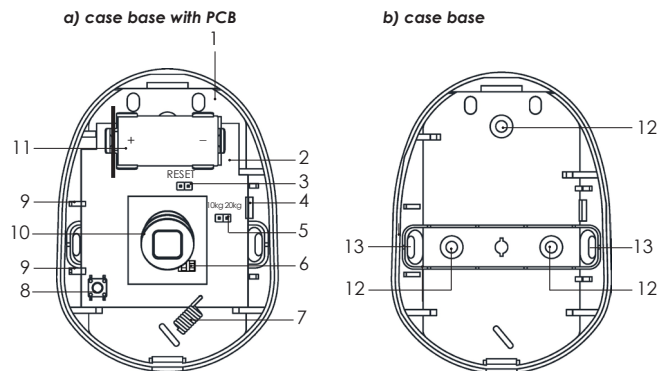
The Detector consists of a case cover and a case base (1) with an installed printed circuit board (2).

The printed circuit board is fixed to the base by two hooks (9) and a latch (4). The printed circuit board contains:

- 3 – RESET contacts;
- 5 – jumper for switching of the pet immunity;
- 6 – LED indicators;
- 7 – antenna;
- 8 – tamper sensor;
- 10 – sensor;
- 11 – CR123A lithium battery with insulator. A CR2450L backup battery with insulator (not shown in the picture) is installed on the back of the PCB;

On the base of the case there are:

- 12 – openable holes for wall mounting;
- 13 – openable holes for installation in the corner.



Picture 2

7 SELECTING A PLACE OF INSTALLATION

The Detector should be installed indoors only.

When choosing a place for installing the Detector, take into account the presence of obstacles that impair the passage of the radio signal.

The Detector can be installed in areas with pets weighing up to 40 kg.

DO NOT install the Detector in 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 permissible limits.



8 INDICATION

Table 3

Status	Indication	Notes
Linking mode completion	Turn on the red indicator light for 2-3 s	
Linking mode	Periodic turning on of the green indicator light	Registering a Detector in the Hub
«Identification» indication	Alternately turning on the red and green indicator lights for 15 minutes or until the case is opened	The corresponding command has been received from the Hub
«Alarm»	Single turning on of the red indicator light for 3 s*	Status indication is on and «identification» indication is off
Connection quality assessment	See «Connection quality assessment» paragraph	
* Light indication of the Detector status turns on and remains on during the first 15 minutes after closing the case in the absence of other types of indication, provided that during this time a notification about unauthorized access is not generated or a command from the Hub is not transmitted to prohibit the indication.		

9 CONNECTING THE DETECTOR TO THE SYSTEM

9.1 Remove the Detector case cover.

9.2 Open the RiDom application. In the «My Devices» tab, click  and then . Select the «RI-MDT-1» Detector from the list of devices and follow the application prompts.

9.3 When prompted by the app, remove the battery isolator.

9.4 The Detector will periodically turn on the green indicator, which indicates that it is in the «Linking» mode.

9.5 When successfully connected to the Hub, the indicator on the Detector will turn red for 2-3 seconds, then you will be able to see the Detector in the application, as well as all data about the Detector. The «Linking» mode time is limited to 100 seconds. To resume the «Linking» mode, you need to briefly close the «RESET» contacts with a screwdriver.

9.6 The sensitivity of the Detector is set via the mobile application according to the parameters of the table.

Table 4

Pet immunity	Max length
No immunity	12 m
10 kg	10 m
20 kg	10 m
40 kg	8 m

9.7 Put the case cover back.

10 CONNECTION QUALITY ASSESSMENT

Before installing the Detector on the site of operation, it is advisable to check the quality of communication with the Hub.

Perform the following steps to do it:

- place the fully prepared for operation Detector with the closed case cover in the intended installation location;
- open the Detector case, the Detector indicates 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	Choose a different installation location or use a repeater
Red	Multiple blinks	No connection	

11 INSTALLATION

Before installing the Detector, you must remove the case cover with the printed circuit board.

Then follow the installation instructions:

- remove the Detector case cover;
- remove the printed circuit board (Pic. 2, item 2) by releasing the latch holding it (Pic. 2, item 4);
- drill holes in the base of the case (Pic. 2 b) that will be used to mount the Detector;
- having chosen the installation location, make markings for installation taking into account the position of the holes on the base of the Detector, drill holes in the wall;
- fix the Detector base to the selected location;
- install the printed circuit board;
- close the case cover.

Note: To exclude false alarms from pets, it is not recommended to deviate its position from the vertical to more than 2°, when installing the Detector.

12 OPERATION ABILITY CHECK

The checking should be carried out in the absence of unauthorized persons at the secured site.

If there may be pets weighing from 10 to 40 kg in the room, remove the «10 kg» jumper (Pic. 2, item 5). It is also recommended to remove the «10 kg» jumper in rooms with high noise levels.

Start walking through the detection area. After 3-4 steps in the detection zone, the Detector should indicate detection by briefly turning on the red indicator. Wait 10 seconds and continue moving through the detection area. If there is no movement in the room, the indication of the Detector should not turn on.

13 FEATURES OF THE DETECTOR OPERATION

13.1 Turning the Detector power on and off is done by installing and removing the battery.

13.2 If communication with the Hub is lost, the Detector continues searching. When turning off the Hub for a long time, it is recommended to turn off the power to the Detector as well (see section 13.1).

13.3 It should be taken into account that when the Detector operates in the temperature range from -20 °C to +5 °C, the battery life may be less than 8 years.

ATTENTION! The Detector must be checked at least once a year to ensure its performance.

14 STORAGE AND TRANSPORTATION

14.1 The Detectors in their original packaging are resistant to:

- transport jolting with the acceleration up to 30 m/sec² 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.

14.2 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.

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

14.4 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-conducting dust, acid and alkali fumes, or corrosive or destroying insulation gases.

15 DISPOSAL INFORMATION

15.1 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.

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

16 MANUFACTURER WARRANTY

16.1 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.

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

16.3 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: Warranties do not apply to lithium batteries.

17 DATE OF MANUFACTURE

_____ month, year



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Made in Russia

v11.1.1