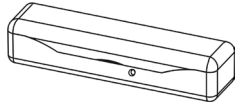


WIRELESS TEMPERATURE AND HUMIDITY DETECTOR

«Comfort-RK»



Installation Guide

1 General information

1.1 The «Comfort-RK» wireless temperature and humidity detector (hereinafter referred to as the Detector) monitors air temperature and relative air humidity and transmits the data via a two-way wireless channel in accordance with the «Rielta-Kontakt-R» protocol to a Control Panel (hereinafter referred to as CP).

1.2 The Detector operates in the frequency range from 433.05 to 434.79 MHz. The power emitted by the transmitter does not exceed 10 mW. The Detector does not require any permission or licensing for operation and is not subject to registration.

1.3 Two frequencies are used to transmit wireless signals between the Detector and the CP – the main and backup. The transition to the reserve frequency happens automatically.

1.4 The Detector is powered by one CR123A lithium battery.

1.5 The Detector has two channels of measurement and control. Channel 1 – temperature sensor (hereinafter referred to as TS). Channel 2 – humidity sensor (hereinafter referred to as HS).

1.6 The status of the Detector is indicated by red and green LED indicators.

1.7 By default, the Detector is set to control ranges of air temperature and relative air humidity. The temperature range thresholds are: lower – minus 40 °C, upper – plus 125 °C. The air humidity range thresholds are: lower - 0% RH, upper - 100% RH. The limits of the range are stored in the non-volatile memory of the Detector and can be changed by a command from the CP for each channel separately. When the temperature or relative humidity goes beyond the controlled range, an «Alarm» notification is generated in the corresponding channel.

1.8 The Detector generates and transmits the following notifications:

- «Normal» – when the temperature and humidity are within the specified range;
- «Alarm in channel 1» – when the temperature in channel 1 goes beyond the specified range by 0.5 °C or more;
- «Alarm in channel 2» – when the humidity in channel 2 goes beyond the specified range by 5% RH or more;
- «Opening» – when the Detector case is open;
- «Battery discharge» – when the battery supply voltage drops below 2,2_{0,2} V;
- 1.9 The Detector is designed for continuous round-the-clock operation.

1.10 The Detector refers to products for a specific purpose, continuous long-term use, aging, non-repairable and serviceable.

1.11 The Detector is resistant to the electromagnetic interference of the third degree of severity. If the specified levels are exceeded at the place of operation, the quality of operation of the Detector is not guaranteed.

1.12 Industrial radio interference generated by the Detector complies with the standards for technical equipment used in residential, commercial and industrial areas with low power consumption.

1.13 The Detector is not a measuring instrument.

2 Technical specifications

Table 1

Parameter	Value
Protection class	IP20
Overall dimensions	98 x 26 x 23 mm
Weight	50 g
Duration of operation of the Detector from one lithium battery in normal climatic conditions and with a set broadcast period of 60 seconds	36 months
Average service life	8 years
Operational conditions	
Operating temperature range	from 20 to + 55 °C
Accuracy of temperature measurement in the operating range	± 0,5 °C
Accuracy of humidity measurement in the operating temperature range	±5 % RH
Permissible relative humidity at a temperature of +25 °C	up to 98 %*
Type of climatic modification	UHL4
*The recommended operating humidity range is 20 to 80% RH (non-condensing) at 0 to 55°C. Prolonged operation outside these ranges may cause the humidity sensor to shift and have a long recovery time.	

3 Contents of the set

Table 2

Name	Qty
Wireless temperature and humidity detector «Comfort-RK»	1 pc.
Screw 3-3x30.016	2 pcs.
Lithium battery CR123A	1 pc.*
Instructions for the wireless temperature and humidity detector «Comfort-RK»	1 copy
* Included	

4 Design

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

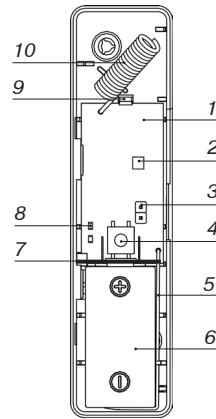
The printed circuit board contains:

- built-in temperature and moisture sensor (2);
- RESET contacts (3);
- tamper switch (4);
- battery holder (5);
- battery (6) with insulator (7);
- red and green LED indicators (8);
- antenna (10).

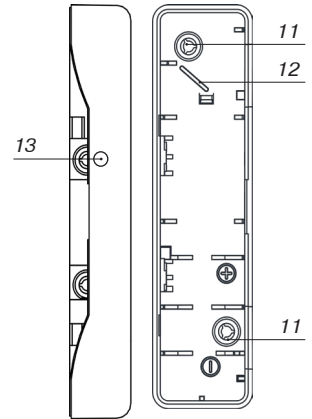
The board is fixed in the base of the case with a latch (9).

There are openable mounting holes (11), ventilation holes for TS and HS (13) at the base of the case.

a) Case base with PCB



b) Case base



Picture 1 – «Comfort-RK»

5 Indication

The Detector generates the following types of indication:

- «Binding» mode (registration of the Detector in the CP);
 - «Identification» mode turns on when the corresponding command is received from the CP and remains for 15 minutes or until the case is opened.
- The modes for turning on the indicators are shown in Table 3.

Table 3

Detector mode	Indication	Notes
Mode «binding»	Turns on the green indicator with a period of 1 s	Registration of the Detector in the CP
End of the mode «binding»	The indicator turns red for 2–3 s	
«Alarm on channel 1» «Alarm on channel 2»	Periodic turning on of the red indicator with a period of 8 s	When the case is closed
Indication «Identification»	Alternately turning on the red and green indicators	The corresponding command has been received from the CP
Communication quality assessment	See the «Communication quality assessment» article	
«Normal»	OFF	

6 Initial operation (registration in the CP)

The mode «binding» is used for registering the Device in the CP and exchanging service information.

6.1 Prepare the CP for detector registration in accordance with the instructions on the CP.

6.2 Install the battery in the holder (5) observing polarity or remove the insulator.

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

6.4 In case of no indication, short close the «RESET» contacts (3) for 2–3 s.

6.5 Upon successful registration, the indicator turns red for 2-3 seconds.

6.6 The time during which the Detector is in the «Linking» mode is limited to 100 s. To enable the «binding» mode again, it is necessary to short close the «RESET» contacts (3) for 2–3 s.

7 CP communication quality assessment

The following needs to be done to assess the quality of radio communication between the Detector and CP:

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

When the switch is released, the Detector generates a notification about the opening of the case, transmits it via radio channel and indicates the quality of radio signal communication with the CP in accordance with Table 4.

Table 4

Indication		Connection quality	Recommendations
Color	Mode		
Green	Three blinks	Perfect	Installation of the alarm in this location is possible
Green	Two blinks	Good	
Green	One blink	Weak	
Red	Four blinks	No connection	Use the «Ladoga RK» system repeaters

8 Installation

Before installing the Detector, remove the cover and remove the printed circuit board. The cover is fixed to the base with latches.

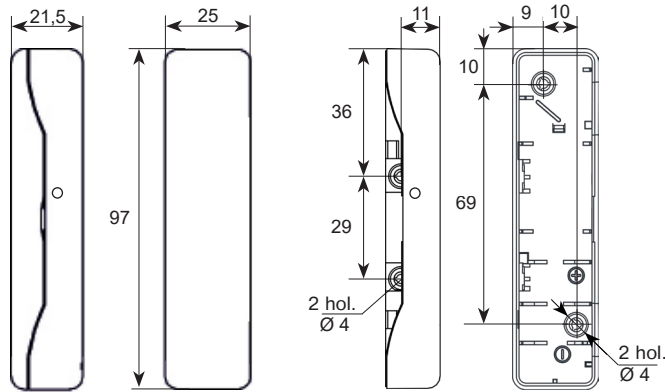
To remove the printed circuit board, press the latch (9) (Pic. 1a) at the base of the case.

Prepare holes for mounting the alarm. The base of the alarm can be used for marking on the place of installation.

Secure the base with screws. Install the circuit board and a battery. Install the case cover.

ATTENTION! The antenna must be installed on the holder (12) (Pic. 1b). Placing the antenna outside the holder significantly reduces the radio range.

Overall dimensions (mm)



Picture 2 – Overall dimensions

9 Storage and transportation

9.1 The Detector 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 ... +50 °C;

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

9.2 The Detector 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.

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

9.4 The storage room shall be free from current-conducting dust, acid vapors, alkali and gases that cause corrosion and destroy insulation.

10 Manufacturer's Guarantees

10.1 The manufacturer guarantees that the Detector meets the requirements of the technical specifications, subject to the conditions of transportation, storage, installation and operation.

10.2 Guaranteed storage period is 27 months from the date of manufacture of the Detector.

10.3 Warranty period of operation is 24 months from the date of commissioning within the warranty period of storage.

10.4 The Detectors that, during the warranty period, subject to compliance with the operating and installation rules, are found to be non-compliant with technical requirements, are repaired by the manufacturer.

Note: Warranties do not apply to lithium batteries.

11 Packing Certificate

Wireless temperature and humidity detector «Comfort-RK» has been manufactured in compliance with the active technical documentation, classified as fit for operation and packed by «Development and Production Enterprise RIELTA» LLC.

Packing date _____
month, year