

WIRELESS FLOOD DETECTOR «STZ-RK» ver.1

Installation Guide

1 Product Overview

1.1 Wireless flood detector «STZ-RK» ver.1 (hereinafter, the Detector) is intended for detecting leaks of water from water-supply pipelines or heating facilities and generating an alarm message via a two-way communication by the «Rielta-Contact-R» protocol. The Detector is intended to operate as a component of any control panel (hereinafter, CP) supporting the wireless exchange protocol «Rielta-Contact-R».

1.2 Water leaks control is ensured by measurement of an external resistance between sensor terminals of the Detector.

1.3 Radio signals are exchanged within the 433.05 to 434.79 MHz frequency range. The transmitter output power does not exceed 10 mW.

1.4 Two operating frequencies: main and reserve are used for the wireless data exchange. The Detector switches over reserve operating frequency automatically.

1.5 Radio exchange sessions are initiated by the Detector at a preset frequency. The frequency settings are 10, 15, 30, 60 sec, 1, 2, 5, 10 min, chosen in the process of the binding procedure. The Detector transmits alarm messages to the CP immediately.

1.6 The Detector power supply is provided by power supply batteries placed inside it's case: the main one and the backup one (CR2450).

1.7 The Detector state is displayed by two-color LED indicator.

1.8 The Detector generates and transmits the following messages via a two-way communication:

- «Norm» – if the external resistance between sensor terminals value is 200 kΩ or more;
- «Alarm» – if the external resistance between sensor terminals value is 100 kΩ or less;
- «Tamper» – in the event of case tampering or the Detector removal from the mounting surface;
- «Main Power Supply Low Battery» – under the main power supply battery voltage drop below 2.2_{-0.2} V;
- «Backup Power Supply Low Battery» – under the backup power supply battery voltage drop below 2.2_{-0.2} V.

1.9 The Detector is designed to operate continuously, around the clock.

2 Features

Table 1

Parameter	Value
Operating temperature, °C	minus 20 ... +55
Permissible relative humidity at +25 °C without moisture condensation up to, %	98
IP rating	IP65
Dimensions, maximum, mm	65 x 55 x 20
Weight, maximum, kg	0.05
Average service life, not less, years	8
Operation time upon normal climate conditions* and preset wireless signal exchange rate 60 sec and more, months:	
- from the main battery, up to:	60
- from the reserve battery, not less:	2

3 Scope of Delivery

Each Detector unit package contains the items listed in Table 2.

Table 2

Name	QNT.
Wireless flood detector «STZ-RK» ver.1	1 pc.
Screw 3-3x30.016	1 pc.
CR2450 lithium power supply battery	2 pcs.
Wireless flood detector «STZ-RK» ver.1. Installation Guide	1 copy

4 The Detector Design

In order to open the cover of the detector insert a screwdriver tip into the notch and then press it down to move the latch (See Figure 1).

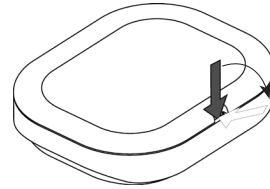


Figure 1

The Detector comprises the base with the openable mounting hole (7) and the holes for the sensory terminals (8) printed circuit board (1) (PCB) installed on the cover. The PCB comprises the following elements: main power supply battery holder plate (2), RESET contacts (3), backup power supply battery holder plate (4), sensor terminals (5), spring contacts (6).

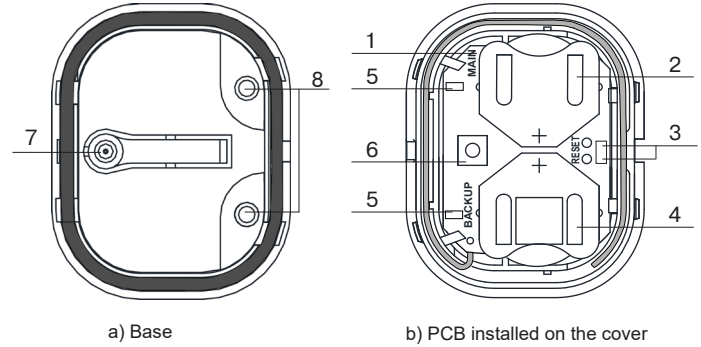


Figure 2 – The Detector Design

5 Indication

The Detector has the following indication modes:

- «Binding» procedure LED indication (procedure of logging in the CP);
- «Identification» indication mode – lights up by the relevant command from CP and remains active during 15 min or until the case is opened;
- LED indication of the Detector state is activated after the Detector cover is closed and remains active during 15 min under conditions:
 - other LED indication types absence;
 - alarm «Tamper» message is not generated during this time;
 - absence of command from the CP disabling the Detector state indication.

LED indicator modes are listed in the Table 3.

Table 3

The Detector State	LED Indication	Note
Binding procedure finished	LED lighting red for 2–3 sec	
«Binding» mode	LED blinking green	The Detector logging in the CP
«Identification»	Alternate LED red and green alternate blinking	On command from the CP
«Alarm»	Single-shot LED lights up red for 4 sec	State indication is on and «Identification» indication is off
Radio communication quality appraising	See sect. «Radio communication quality appraising»	
«Normal»	Indication is off	

6 Binding with the CP

«Binding» mode is used for logging the Detector in the CP and service information exchange.

6.1 Prepare the CP in accordance with CP reference guide.

6.2 Initially install the backup power supply battery to the holder plate (4) on the PCB, thereupon install the main power supply battery to the holder plate (2) (or remove the insulator if the battery is already installed).

6.3 Periodical LED indicator blinking green is evidence of binding process.

6.4 In case of mentioned above LED indication absence, short-circuit RESET terminals for 2–3 sec.

6.5 Successful binding procedure complying is indicated by LED indicator lighting red for 2 – 3 sec.

6.6 The time limit for the binding process of the Detector is 100 sec. To restart the binding procedure, short-circuit RESET terminals for 2–3 sec.

7 Communication Quality Appraising

7.1 To appraise the radio communication quality it is necessary to act as follows:

- set the Detector on the assumed place of installation;
- push and then release case tamper.

7.2 After case tamper releasing the Detector generates case tamper alarm message, transmits it via radio communication channel and represents communication quality with CP by LED indication in accordance with the Table 4.

Table 4

LED Indication		Radio communication quality appraisal	Recommendations
Color	Mode		
Green	Three blinks	Excellent	Install the Detector on this place
Green	Two blinks	Good	
Green	One blink	Communication established	Choose another place for installation or use a repeater*
Red	Four blinks	No communication	

* «Ladoga-RK» system repeater

8 Installation

8.1 Install the annunciator in a place where the communication quality is rated «excellent» or «good».

8.2 Attach the base to the mounting surface.

The preferable way of attaching the annunciator is to glue the base to the mounting surface with double-sided adhesive tape. The following steps need to be done in order to properly mount the annunciator:

- ensure that the mounting surface is even, dry and clean;
- remove the protective film from the working surface of the adhesive tape;
- press the annunciator firmly against the mounting surface and hold it for 2–3 s.

In order to ensure protection from separation or removal, the annunciator is attached to the protected object with a screw through a covered mounting hole (7) (Picture 2).

8.3 Fix the cover with the printed circuit board to the base.

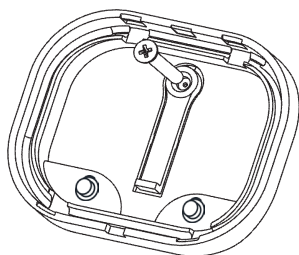


Figure 3

Attention! If the CP is planned to be switched off for a long time, de-energize the Detector to ensure the battery resource economy.

9 Storage and Transportation

9.1 The Detector in original package without power supply batteries is resistant to:

a) transport jolting with the acceleration of 30 m/sec² with impact frequency rate from 10 to 120 impacts/sec or 15000 impacts with the same acceleration;

b) the ambient temperature from minus 50 ... +50 °C;

c) relative air humidity (95 ± 3) % at the ambient temperature +35 °C.

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

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

10 Manufacturer's Guarantees

10.1 The manufacturer guarantees conformity of the Detector to the requirements of technical conditions provided the transportation, storage, installation and operation conditions are observed.

10.2 The guaranteed shelf life of the Detector is 39 months since the date of manufacture.

10.3 The guaranteed useful life is 36 months since the day of putting into operation.

10.4 The Detectors that are found non-conforming to the requirements of technical conditions shall be repaired by the manufacturer, provided the installation and operation rules have been complied.

Note – Warranty obligations are not applied to power supply battery.

11 Packing Certificate

Wireless flood detector «STZ-RK» ver.1 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