

«CN-Smoke»

Installation Guide

Introduction

The wireless smoke detector «CN-Smoke» (hereinafter, the Detector) is intended for detecting ignition accompanied by smoke, generating and sending a «Fire» message within the 433.05 to 434.79 MHz frequency range via a two-way communication by the «CN-Contact-R» exchange protocol.

The Detector is designed for operation as a component of any control panel (hereinafter, CP) supporting the «CN-Contact-R» wireless exchange protocol.

The mode of operation of the Detector is based on the detection of the optical radiation reflected from smoke particles.

Features

The Detector has the following features:

- Received command «Set On» from the CP by the wireless two-way communication «CN-Contact-R» protocol is the obligatory condition of the Detector restart after the fire «Alarm» message generation;
- The Detector comprises built-in functional testing module;
- Failure message is generated by the Detector in case of circuit layout failure or sensitivity decrease for more than 2.5 times;
- The Detector provides compensation of the optical smoke chamber dust content. Upon reaching the dust concentration threshold, the «Optical Smoke Chamber Dustiness» message is generated by the Detector;
- Alarm messages in case of wall or cover tampering and removal of the detector from the base are generated by the Detector;
- The Detector provides automatic switch to a backup operating frequency in case of an imperfect interference situation at the main one;
- «Identification» LED indication is switched on and disabled by the relevant command from CP;
- The Detector is powered from two galvanic power supply batteries: the main CR123A and backup CR2032 ones;
- The Detector ensures not less than three years of standby operation under main battery power supply and not less than two months under the backup one.

Features

Table 1

Parameter Name	Value
Threshold of sensitivity	0.14 dB/m;
Detector response delay	maximum 5 s
Broadcast period	10 sec to 10 min
Operating temperature	from minus 20 to +55 °C
Dimensions	maximum Ø 125 x 70 mm
Weight (without batteries)	maximum 0.2 kg
IP rating	IP30

The Detector is powered from two batteries: the main one, CR123A type and the backup one, CR2032 type, located inside the Detector case.

Description	QNT
Wireless smoke Detector «CN-Smoke»	1 pc.
Screw 3-3x40.016	2 pcs.
Screw plug «SORMAT» NAT 5x25	2 pcs.
CR123A lithium power supply battery	1 pc.
CR2032 lithium power supply battery	1 pc.
Wireless smoke Detector «CN-Smoke». Installation Guide	1 copy

Informativity

The Detector ensures transmission and indication of the following messages:

- «Fire» - in case the optical density of the environment exceeds the threshold of sensitivity;
- «Tamper» - in case the Detector is resumed from its base;
- «Fault» - in case of the Detector system fault or its sensitivity drops more than 2.5 times;

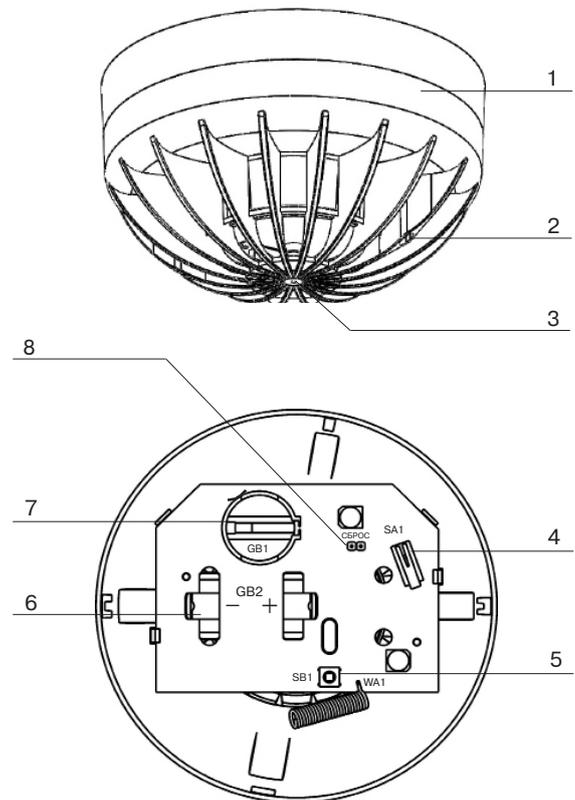


Figure 1

- «Norm» - in case there are no other messages;
- «Main low-battery» - upon power voltage drops below 2.4 ± 0.2 during a communication session;
- «Backup low-battery» - upon power voltage drops below 2.4 ± 0.2 during a communication session;
- «Binding» mode - during logging of the Detector in the system;
- «Identification» - upon receipt of a relevant command from the CP;
- Communication quality appraising.

Design of the Detector

The Detector outside view is shown in Figure 1.

The Detector is enclosed in a plastic case (1). Two LED indicators (2) are located on the face side of the case. The operability of the Detector is checked by means of the introduction of a reflector (needle, clip, wire with maximal thickness 1 mm) through the opening (3) located on the case (1). The PCB comprises tamper contacts (4), the operability test button (5), the main power supply battery holder (6) and the backup power supply battery holder (7), «RESET» contacts (8).

LED Indication

Table 2

Detector Status	Indication
«Norm» mode	LED indicator lights green (once per 15 seconds)
Mode «Binding»	LED indicator blinks green intermittently
«Fire»	LED indicator blinks red alternately at 1 Hz frequency
«Communication Quality Appraisal»	see Table 3
«Identification» indication is on	LED indicator blinks red and green alternately
No communication with the CP	LED indicator blinks red (once per 15 seconds)

Binding with the CP

The «Binding» procedure is intended for logging of the connected Detector in the CP/Repeater, and for the reception of communication parameters by the Detector.

1. Install the CR2032 type backup power supply battery.
2. Install the CR123A type main power supply battery.
3. Close «Reset» contacts on the PCB in order to reset the Detector.
4. The green LED blinking displays the Detector operation in the «Binding» mode.
5. After a successful binding with the CP, the red LED indicator lights for 2 seconds.

6. The time during which the Detector operates in the «Binding» mode is limited to 100 sec., after what the Detector changes to the sleep mode. The «Binding» mode may be resumed (see Cl. 3).

Note - A Detector supplied by the manufacturer is ready for the binding procedure and does not require an additional contacts closing.

Installing the Detector

When choosing the place of installation for the Detector, take into account the fact that the Detector refers to fire Detectors with operability control and therefore, a single Detector may be installed in the monitored premise.

All other conditions being equal, the location chosen for the installation of the Detector should meet the following requirements:

- prevention of water ingress from the front side and the base side;
- minimum vibrations of building structures;
- minimum illumination
- maximum distance from sources of electromagnetic interference and infrared radiation (heating units);
- maximum convenience of installation, checking and removal of the Detector.

Transmission quality may differ from premise to premise; therefore, it is advisable to apprise a communication quality before the Detector is finally installed.

Communication Quality Appraising

The Detector should be installed within the radio coverage zone of the CP; therefore, it is recommended to check the messages transmission from the presumed installation place and to appraise the quality of the communication.

After removal from its base (tamper contact is released), the Detector transmits the «Tamper» message and then displays the quality of communication as per Table 3.

Table 3

LED Indication		Communication Quality Appraisal	Recommendations
Color	Mode		
Green	Three blinks	Excellent	Install the Detector at 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	
*) - «CN-Repeater»			

Operability Test

Push the operability test button (5) and hold it during not less than 5 s, until the red LED indicator starts blinking. Make sure that «Fire» alarm message at correspondent zone is received and logged in CP.

Feed testing spray or introduce the reflector (needle, clip, wire with maximal thickness 1 mm) into the optical smoke chamber opening. To restart the Detector after the fire «Alarm» message generation, «Set On» command by the wireless two-way communication «CN-Contact-R» protocol from the CP is required.

Installation

Install the Detector in the location, where the quality of communication is appraised «excellent» or «good».

Install the base at the chosen place. Insert the Detector into the base and fix it by turning clockwise.

Maintenance

The operability of the Detector should be checked at least annually.

The Detector should be cleaned from dust if the Detector generates «Fault» or «Optical Smoke Chamber Dustiness» message. For this purpose, sweep the optical system of the Detector by air under 0.3 – 0.5 kg/cm² pressure.

In order to prevent the optical smoke chamber dustiness, depending on the operating conditions and according to statistical data, it is recommended to carry out periodical technical maintenance of all Detectors logged in the fire alarm system.

Attention! For the power supply battery life safe-energy, do not leave the Detector energized with the repeater powered off for a long time.

Storage and Transportation

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.

Storage conditions of the Detectors: storage premises should not contain any current-conducting dust, acid and alkali fumes, as well as corrosive gases or those destroying insulation.

Manufacturer's Guarantees

«RIELTA» JSC guarantees conformity of the Detector to it's Technical Specifications if conditions of transportation, storage, assembling and operation are observed. The guaranteed storage period is 63 months since the date of manufacturing the Detector.

The guaranteed period of operation is 60 months since the date of commissioning within the storage period guaranteed.

For guaranteed maintenance, please contact:

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Obvodny Channel emb., 199-201, build.13, BC «Obvodny Dvor»

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E-mail: cnord@cnord.ru, support@cnord.ru, www.cnord.ru

Note - Warranty obligations are not applied to the power supply batteries.

Packing Certificate

Wireless smoke detector «CN-Smoke» has been manufactured in accordance with current technical documentation is classified as fit for operation and is packed by «RIELTA» JSC.

Packing date _____
month, year

Made in Russia

Rev. 4 of 29.02.16
№00169

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