

Installation Guide

1 Introduction

1.1 Addressable sound glass break detectors «Zvon-A», «Zvon-A» ver.1 (hereinafter referred to as the Detector) allows to detect the sound of glass destruction, incl. ordinary, tempered, patterned, reinforced, multilayer and laminated, single-chamber and double-glazed windows, glass blocks or interior elements of enclosed spaces.

The Detector generates and transmits notifications via an addressable loop (hereinafter referred to as ADL) in accordance with the Rielta-Contact-ADR protocol to a control panel (hereinafter referred to as CP).

1.2 The Detector is equipped with light indicators to control the operating mode and a microswitch to detect attempts to open the case of the device. Control of the operating modes, turning on and off, the status and other indications is made by the corresponding commands from the CP.

1.3 The Detector generates and ensures transmission of the following notifications via ADL:

- «Normal» – when the device is in standby mode;
- «Alarm» – when destructive effects on the secured glass are detected;
- «Opening» – when the case of the Detector is open;
- «Power failure» – when the supply voltage in the ADL is low;
- «Sensitivity» – when setting the range depending on the location of the Detector;

- «Test Mode» – for setting up and checking the functionality of the Detector as part of the security alarm system;

- «Short circuit» – when a short circuit is detected (only for «Zvon-A» ver.1). Notifications «Alarm» and «Opening» are transmitted immediately upon the request from the CP.

For the «Zvon-A» ver.1, the presence of a short circuit is checked when the supply voltage is applied.

1.4 The Detector is not a source of any interference in relation to similar detectors, detectors of other types and purposes, as well as in relation to household radio equipment.

1.5 The Detector is noise-proof (does not issue an «Alarm» notification) when:

- non-destructive mechanical impact on glass (glass block) with a rubber object (ball) with hardness in international units (60 ± 5) IRHD with an impact energy of 2 J at an object speed of 3.1 m/s;
- exposure to sinusoidal sound signals at the operating frequencies of the detector, creating a sound pressure level at its location:

1) no more than 70 dB at the first operating frequency;

2) no more than 80 dB at the second operating frequency;

- exposure to an acoustic signal with the spectral characteristic of white noise, creating a sound pressure level of no more than 70 dB at the detector location.

1.6 The Detector is not a source of interference to similar detectors, detectors of other types and purposes, as well as to any other household radio equipment.

1.7 The Detector is designed for continuous 24-hour operation.

2 Technical features

- Provides remote control of a protected glass structure in an enclosed space.

- Compatible with various types and sizes of glass, as well as with active ultrasonic and radio wave detectors.

- Provides indication of operating modes (indication can be turned off).
- Possibility of coarsening sensitivity at the first operating frequency to a level of (100 ± 3) dB.

- The Detector is powered from the ADL.

- Various options for installation: on the wall, in the corner or on the ceiling of a room.

3 Technical specifications

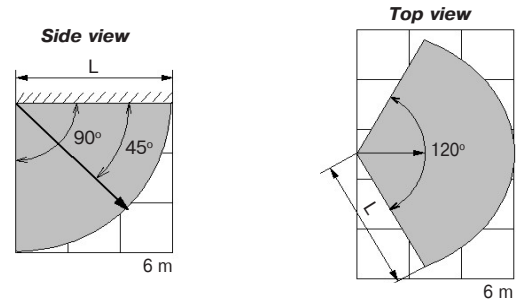
Table 1

Parameters	Values
Maximum operating range	6 m
Minimum protected glass area (with aspect ratio of at least 0.8)	0,1 m ²
Viewing angle	120°
Maximum sensitivity (with a signal duration of at least 20 ms)	
- at the first operating frequency	(80 ± 3) dB
- at the second operating frequency	(90 ± 3) dB
Installation height (in accordance with Pictures 4–8)	2 m
Probability of detecting destruction of protected glass	0,9
Number of detection zones	one
Detector technical readiness time	10 s
Supply voltage (in the absence of ADL exchange)	6,5...14 V
Current consumption	1,5 mA
Protection class	IP30
Weight	0,05 kg
Overall dimensions	68x68x30 mm
Average time to failure	60 000 hrs
Average service life	8 years
Operational conditions	
Operating temperature range	-20...+55 °C
Relative air humidity at +25 °C	98 %

4 Field of application

The detector can be used in offices, banks, shops, museums, exhibition halls, residential premises, as well as in any other residential and non-residential objects.

Detection zone diagram



Picture 1

5 Contents of the set

Table 2

Name	QTY	
Addressable sound glass break detector «Zvon-A»	1 pc.	1 pc.
Addressable sound glass break detector «Zvon-A» ver.1		
Screw 3-3x30.016	2 pcs.	2 pcs.
Dowel NAT 5x25 SORMAT	2 pcs.	2 pcs.
Instructions for the Addressable sound glass break detectors «Zvon-A», «Zvon-A» ver.1	1 copy	1 copy

6 Design

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

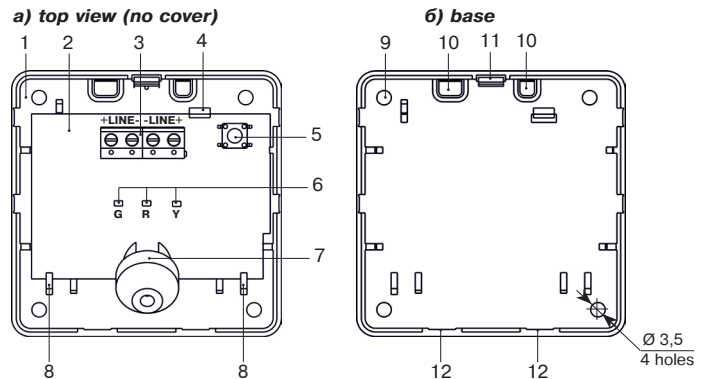
The printed circuit board is fixed to the base with two hooks (8) and a latch (4).

The printed circuit board contains:

- terminal blocks (3) for connecting ASH;
- tamper switch (5);
- three LED indicators (6);
- microphone (7).

At the base of the body (Pic. 2 b) has:

- four holes for wall mounting (9);
- plugs for holes for wires (10);
- cover retainer (11);
- hole for lid lock (12).



Picture 2 – Case base with PCB

7 Indication

The detector generates the following types of indication:

- indication of successful registration/deletion of the Detector in the CP;
- «Identification» indication turns on when receiving the corresponding command from the control panel and remains active for 15 minutes;

- indication of the Detector state turns on immediately after power is applied, after registering/deleting the Detector in the CP and upon receiving the corresponding command from the CP and is stored for 15 minutes in the absence of other types of indication.

Indication modes are presented in Table 3.

8 Choosing the place of installation

The following requirements should be considered before installing the Detector:

- it is recommended to install the Detector at a height of at least 2 m (see installation examples in Pic. 5 – 9);
- when choosing an installation location, the Detector's radiation pattern should be taken into account (Fig. 1);
- the distance (L) from the Detector to the most remote point of the secured glass should not exceed 6 m;
- when working together with an active ultrasonic detector, the distance between them must be at least 1 m;
- all areas of protected glass must be within the direct line of sight of the Detector;
- the microphone of the Detector must be directed towards the protected glass structure.

The Detector should be located no closer than 0.5 m from power electrical cables.

Table 3

Detector status	Indication	
	Indicator operation	Operation mode
Successful registration/deletion	intermittent red light on for 2 s	
«Alarm»	single short switching on of the red indicator with a period of 2 s	
«Identification»	double short switching on of the red indicator with a period of 2 s	on command from CP
«Normal»	off	
«Testing»	intermittent green indicator light	for 10 minutes upon command from the CP
«Interference»	turning on the yellow indicator turning on the green indicator	at 1 operating frequency at 2 operating frequency

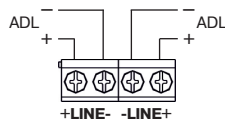
9 Installation and registration

Having chosen the location for installing the Detector, make markings for its mounting.

- Remove the Detector cover by pressing the cover lock with a screwdriver (Pic. 3).
- Open the holes in the base of the Detector (pos. 10, Pic. 2 b) that will be used for laying wires.
- Having chosen the installation location, mark the holes for installation (pos. 9, Pic. 2 b) taking into account the position of the holes in the base of the Detector, drill holes at the installation site.
- Pass the wires through the holes in the base of the Detector, leave a few centimeters of the mounting wire for connection to the blocks.
- Connect the wires according to pic. 4.
- Attach the Detector base to the selected location.
- Prepare the CP for the Detector registration in accordance with the instructions on the control panel.
- Register the detector in the CP.
- Install the PCB and install the cover.



Picture 3



Picture 4

10 Adjusting sensitivity and checking functionality

After installing and registering the Detector, it is recommended to assess the sound interference situation in the room (the indicator of the Detector should not turn green). When the indicator turns green, it shows that there is noise interference in the room. Eliminate sources of interference whenever possible.

Adjusting the sensitivity of the Detector is intended to set its operating range in accordance with the distance from the most distant point of the secured object to the Detector. If this distance is between 3 and 6 m, it is recommended to use maximum sensitivity (level 3). At a shorter distance, you can reduce the sensitivity of the Detector in 6 dB steps from level 3 to 0 (minimum). Changing the sensitivity is carried out by issuing a command from the CP. After reducing the sensitivity, check the detection ability of the Detector using the acoustic glass breaking sound simulator «ARS» by Argus-Spectrum or similar, or a test it with a steel ball with a diameter of 20-22 mm suspended on a 30-35 cm long thread. Move the Detector into the «Testing» mode with a command from the CP, and then the release the ball on the thread to hit the glass from a suspended position at an angle 45 ± 15 degrees depending on the type of strength and thickness of the glass. Perform test effects with a simulator (or a ball) several times. When testing with a simulator or a ball, the Detector must generate an alarm notification.

11 Storage and transportation

11.1 Storage of the Detector in a transportation package. The storage room must be free of conductive dust, vapors of acids and alkalis, as well as gases that cause corrosion and destroy insulation.

11.2 The boxed Detector can be transported by any type of transport in covered vehicles (railway cars, cars, containers, sealed heated compartments of aircraft, holds, etc.).

11.3 The conditions for transporting the Detector must comply with storage conditions.

12 Manufacturer's Guarantees

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

12.2 Guaranteed storage period is 63 months from the date of manufacture of the Detector.

12.3 Warranty period of operation is 60 months from the date of commissioning within the warranty period of storage.

12.4 Detectors that, during the warranty period, are found to be non-compliant with the operating and installation rules, are found to be non-compliant with technical specifications, are repaired by the manufacturer.

13 Packing Certificate

Addressable sound glass break security detector «Zvon-A»* has been manufactured in compliance with the active technical documentation, classified as fit for operation and packed by «Development and Production Enterprise RIELTA» LLC.

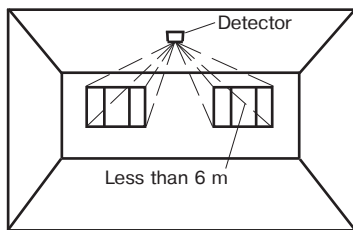
Packing date _____ month, year

* Depending on the model:

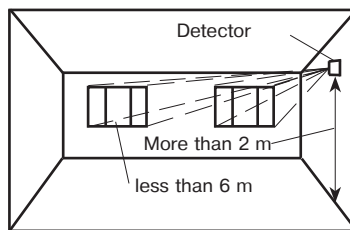
- «Zvon-A»
- «Zvon-A» ver.1

14 Examples of the Detector installation

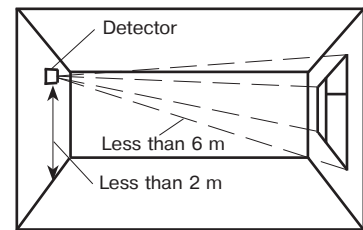
Pictures 5–9 show options for correct installation of the Detector; Picture 10 shows options for incorrect installation.



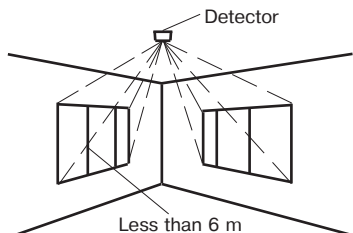
Picture 5 – Ceiling insatallation



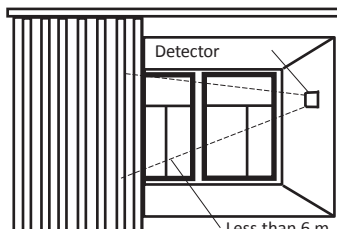
Picture 6 – Side wall installation



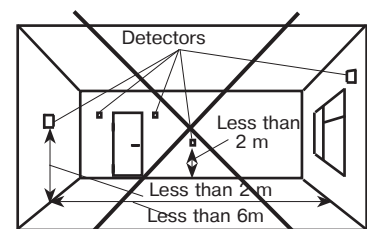
Picture 7 – Opposite wall installation



Picture 8 – Ceiling installation (enabling control of windows in adjacent walls)



Picture 9 – installation between window and curtain



Picture 10 – Incorrect places of installation