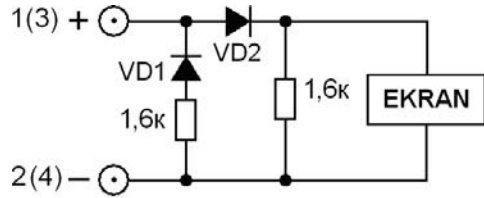




2. To control the supply loop, it is possible to use the voltage whose polarity is opposite to the working one or direct current.




Picture 4 Internal diagram of circuit control of the main (additional) section of EKCRAN fire-alarm device

CERTIFICATES

 The conformance certificate of the Certification system of GOST R of Russian State Standard is issued to the close company "Eridan" by the certification authorities for explosion-proof measurement instrumentations of CA EPMI "VNIFTRI".

 The Certificate of fire safety is issued to the close company "Eridan" by certification authorities "FIRETEST" Federal State Institution of All-Russian Research Institute for Fire Protection the Ministry of Emergency Situations of Russia.

 Company quality management system conforms to requirements GOST R ISO 9001-2008 (ИСО 9001:2008).

14. TEST CERTIFICATE

Indicator EKCRAN-SU _____ works number _____ meets the specifications of 4371-007-43082497-05 standard, is acknowledged as disposable for service.

Date of issue _____

Signature of persons accountable for acceptance _____ Seal
(signature)

15. PACKAGE DATA

Indicator EKCRAN-SU - _____ works number _____ is packaged by the close company "Eridan", i.e. 12 Lenina St, Beryozovsky, Sverdlovskaya oblast according to the requirements set by 4371-007-43082497-05 standard.

Package date _____

Package is produced by _____ Seal
(signature)

The product after packaging was accepted by _____
(signature)

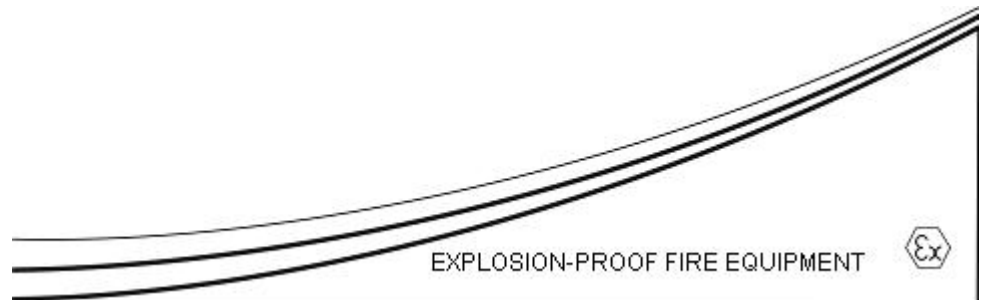


12 Lenina St, Beryozovsky, Sverdlovskaya oblast, Russia, 623700
Tel/fax: +7 (343 69) 451-31, 457-68; tel: +7 (343 69) 457-53
e-mail: market@eridan-zao.ru; http://www.eridan-zao.ru

FIRE-ALARM DEVICE Fire Explosion-proof EKCRAN-S, EKCRAN-SZ, EKCRAN-SU

CERTIFICATE

4371-007-43082497-05-01 PC (Production Certificate), 2011



1. PRODUCT DESIGNATION

The given certificate is combined with operation manual and is for the explosive-proof fire fire-alarm device EKCRAN (further referred to as the fire-alarm device), which is applied in fire-alarm systems. The fire-alarm device is designed to be used as a light or sound-and-light warning device, informational locators and gives out light or sound-and-light signals in explosion hazardous area.

Hardware climatic version U1 (operation temperature from 55°C up to 75°C), atmosphere type II in accordance with GOST 15150, the water and dust proof degree of protection of the cover IP65 in accordance with GOST 14254.

The fire-alarm device has an explosion-proof marking 1Exmb[ib]IICT4 X in accordance with GOST R 52350.0, airtight packing by compound "mb" and internal spark-proof circuit

The fire-alarm device conforms to norms of fire security in accordance with GOST R 53325 and SP 5.13130.2009 demands.

The fire-alarm device can be installed in the rooms with the explosive mixture of gases and vapors with air categories IIA, IIB and IIC, according to the classification in chapter 7.3 EIC - Electrical Installations Code (the sixth edition), GOST R of 51330.9 and other directory documents regulating the electric equipment application in explosion hazard zones.

Production of fire-alarm devices is possible only if valid certificates of accordance to fire and explosion security norms are present.

The given certificate covers the following modifications of fire-alarm device:

1. Fire Explosion-proof light fire-alarm device EKCRAN-S (constantly emitting light or flashing on and off, caption color – red or yellow);
2. Fire Explosion-proof sound-and-light fire-alarm device EKCRAN-SZ (flashing on and off);
3. Fire explosion-proof light indicator EKCRAN-SU (constantly emitting light, caption color – white);
4. Fire-alarm device EKCRAN-S, EKCRAN-SZ with additional light-and-information section “AUTOMATION IS TURNED OFF”

In all EKCRAN modifications a possibility of circuit supervision of the main and additional sections is designed.

Fire-alarm device's connection diagrams are shown in Appendix A.

2. GENERAL SPECIFICATIONS

2.1 The range of voltage level 12-24 V from constant-current source.

2.2 Maximum current the fire-alarm device consumes: no more than 200 μA.

- 1) no more than 0,3 A with source voltage 12 V;
no more than 0,2 A with source voltage 24 V

- 2) Current the additional section consumes – no more than 0,05 A.

2.3. Sound-pressure level, generated by fire-alarm devices' siren at distance (1,00 ± 0,05) m is not less than 95 dB.

2.4 Overall dimensions of the fire-alarm device body are no more than 385×160×45 mm. Length of the supply cable is 1,5 m or upon the customer's request.

2.5 The fire-alarm device mass is no more than 2,5 kg.

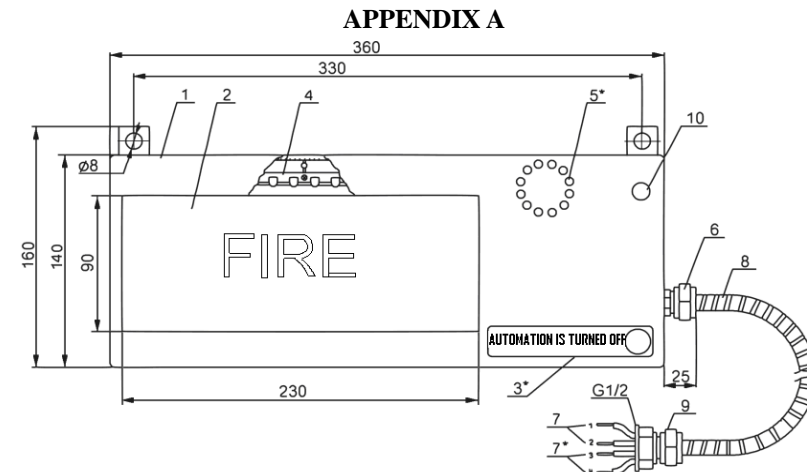
2.6 Designated life time is 10 years.

2.7. Supply cable marking of the fire-alarm device KVVGng-FRLS conforms to SP 6.13130.2009. The cable is protected with a metal hose marked RZ-C-H with an internal diameter D=15 mm, application of which is possible in accordance with demands of articles

storage conditions 1 according to GOST 15150.

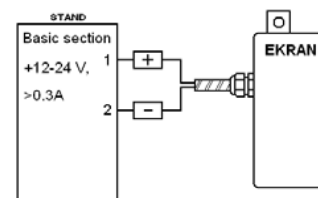
13.3 Fire-alarm devices may be shipped by all transport means in covered transport vehicles according to the requirements of the normative documents.

Boxes should not be subjected to punches and atmospheric precipitations during handling operations and transportation. The type of packing boxes on the vehicle should eliminate their movement.

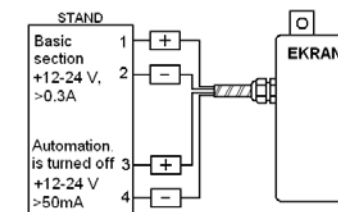


1 – body; 2 – transparent window (main section); 3* - additional light-informational section “AUTOMATION IS TURNED OFF” (in modification); 4 – light-emitting diodes (LEDs) bars; 5* - piezo horn (modification); 6 – cable inlet; 7 – electric cable of the main section; 7* - supply cable of the additional section; 8 – metal hose; 9 – muff; 10 – light-emitting state control diode of the fire-alarm device.

Picture 1. EKCRAN fire-alarm device physical



Picture 2. Ekran-S/SZ/SU fire-alarm devices connection



Picture 3. Connection of Ekran-S/SZ fire-alarm devices with additional section

Cables marking: basic section «+» - red cambric, «-» - blue cambric; additional section «+» - is not marked (white cable), «-» - green cambric.

Comments:

1. EKCRAN fire-alarm devices must be connected while polarity is strictly observed.

- Fire security and Rosstandart logotypes
- inscription «AUTOMATION IS TURNED OFF» (in modification with the additional section).

The order of marking elements listing of the fire-alarm device is defined by the manufacturer. Some elements of the marking can be made on tags or by impact.

10. OPERATING HINTS

10.1 When operating the fire-alarm device should be subject to an external systematic examination in accordance with GOST R 52350.14 and GOST R 52350.17. During the external examination it is necessary to check: the integrity of sheath and transparent part; availability of all fasteners and their elements; quality of fasteners, explosion-proof marking availability; metal hose packing state in the muff (when jerking the metal hose should not be turned over without fastening in the packing assembly and be yanked).

10.2 The operation of the fire-alarm device with damaged parts and other malfunctions is prohibited.

10.3 Operation and repair of the fire-alarm devices must be made in accordance with the norms of chapter 3.4 “Electric installations in explosion hazardous areas” of the Rules of the Technical Operation of Electrical.

Repairing of the fire-alarm device related to the renewal of explosion-proof parameters should be carried out in accordance with GOST R 52350.19“Repairing of the explosion-proof electrical equipment”.

11. PRODUCT WARRANTY

11.1 The producer guarantees that the fire-alarm device conforms with the requirements of technical conditions and construction documentation if the consumer observes storage, transportation and operation regulations.

11.2 Storage warranty period is 36 months from the date of the fire-alarm device’s production.

11.3 Operation warranty period of the fire-alarm device is 24 months from the date of putting the fire-alarm device into operation but no more than 36 months from the date of the fire-alarm device’s production.

12. INFORMATION ABOUT RECLAMATION

12.1 The consumer summons the representative of the manufacturer in case of failure and defect detections in products caused by the producer’s fault. In case of the latter’s failure to appear within a month, the formal notice is drawn up unilaterally, and the fire-alarm device is sent back to the producer together with the certificate and formal notice.

12.2 The manufacturer is to ship the fire-alarm device in a good condition within 2 weeks from the date of formal notice receipt.

12.3 The producer does not accept claims after the expiration of the operation warranty; in case there is no the fire-alarm device certificate; operation regulations are violated.

13. TRANSPORTATION AND STORAGE

13.1 Transportation conditions for the fire-alarm device should correspond to the storage conditions 2 according to GOST 15150 under the temperature from 55°C below zero to 75°C above zero.

13.2 The fire-alarm device should be stored in a package in the room corresponding to the

9.1.2 and 12.2.2.5 of GOST R 52350.14.

2.8. For the purpose of mounting there is a muff designed at the end of the fire-alarm device’s supply cable which There is a muff on the end of the fire-alarm device’s supply cable for carrying out installation. It is screwed directly on the connecting pipe of the switch box with the thread G½ (Appendix A, picture 1)

3. DELIVERY CONTENTS

Total packaging of the fire-alarm device

Designation	Name	Quantity	Comment
4371-007-43082497	Fire-alarm device	1	
	Dowel, self-tapping screw	2	
	Muff	1	
4371-007-43082497-05-01 PC	Certificate	1	
	Fire and ATEX certificates	1	For a batch
		1	

fire-alarm device kitting with order

Set #	Set contents
K1	Fire-alarm device
K2	Fire-alarm device with the additional section

When filling out an application, you should specify the kitting, text and color of the inscription on the basic section (light regime for EKRAN-S, when necessary the length of cable, the inscription on the additional section), quantity.

An example of writing the order of the fire-alarm device:

"The explosion-proof fire fire-alarm device EKRAN-SZ, kitting K1, color red, inscription «FIRE», TC (technical conditions) 4371-007-43082497-05, 1 unit"

4. DESCRIPTION AND PRINCIPLE OF OPERATION

The fire-alarm device contains units and details indicated in picture 1 of Appendix A.

In the body (1) of the fire-alarm device with the transparent window (2) the circuit board, bar with light-emitting diodes (LEDs) (4) and piezo-horn (5* – for the EKRAN-SZ); the board, bars and piezo-horn are filled with an insulating compound. Outside, through the cable inlet (6), the power cable KVVGng-FRLS (7) is brought into the metal hose RZ-C-H (8) whose diameter is Ø20 mm, bend radius is no less than 40 mm. There is the muff (9) on the cable ending which is screwed directly on the connecting pipe of the switch box with the thread G½ .

Fire-alarm device’s body is made of antistatic polyamide PA6, antistatic glass with low-emissions cover is used.

The fire-alarm device is fastened with the body to the vertical plane through two holes with Ø8 mm.

The diagrams for fire-alarm device connection are given in pictures 2 and 3 of the Appendix B.

The supply of the fire-alarm device (basic and additional sections) is done by means of direct voltage 12-24 V through two labeled wires (+ and –) observing polarity.

When feeding supply voltage on the basic or additional sections green light-emitting diode «NET» (10) lights

on the front panel. In this case the fire-alarm device generates light (for EKCRAN-SZ in flashing mode, for EKCRAN-S in flashing or constant mode, for EKCRAN-SU – constant light) and sound (for EKCRAN-SZ) signals. Presence of luminous light-emitting diode «NET» and absence of light (light-and-sound) signal tells about malfunction of the inner electronic circuit of the fire-alarm device.

In the fire-alarm device EKCRAN-SZ light and sound functions turn on in phase opposition, i.e. when the light panel is on, the sound fire-alarm device is off, and otherwise.

When feeding supply to cables of additional section in flashing mode red light-emitting diode “AUTOMATION IS TURNED OFF” is on.

In all EKCRAN modifications the possibility of circuit supervision of the main and additional sections as with voltage whose polarity is opposite to the working one as well as with direct current is designed (picture 4 Appendix A).

5. EXPLOSION-PROOF SECURITY

5.1 Electrical elements of the diagram and non-insulated electrical circuit parts are sheathed with the protection degree IP65 according to GOST14254.

5.2 All electrical elements of the equipment and connection, spark-protective elements of spark-safe circuit are isolated by compound filling from explosion hazard zone in accordance with the requirements of GOST R 52350.11 and GOST R 52350.18.

5.3 The circuitry of the fire-alarm device does not contain sparking elements. Electric strength of insulation, gaps and leakage paths correspond to the requirements of GOST R 52350.11. .

5.4 Sheath material is chosen given the explosion-proof security requirements on the specific surface resistance according to GOST R 52350.0.

5.5 Operating temperature of the compound corresponds to operation conditions. Mechanical and electrical compound properties provide the parameters of explosion-proof security according to GOST R 52350.18.

5.6 Explosion-proof security is provided in case of one internal damage. Explosion-proof security is provided in maximum permissible operation conditions.

6. INSTALLATION ORDER

6.1 Operating and installation conditions of the fire-alarm device should correspond to the demands of GOST R52350.14, the conditions of Electrical Installation Code (the sixth edition, chapter 7.3), Rules of the Technical Operation of Electrical, chapter 3.4, and other directory documents applicable in industry where the fire-alarm device will be used.

6.2 Power supply to the fire-alarm device should be made in a strict conformity with “the Instruction on electric equipment installation of power and lighting networks in explosive zones” Branch Construction Norms (BCN) 332 and the given certificate.

6.4 Before engaging the fire-alarm device in the loop, it is necessary to conduct its external examination. Pay attention to the integrity and availability of the case: seal means (cable inlets, cover).

6.5 The fire-alarm device (picture 1 of Appendix) is fastened with the body (1) to the vertical plane through two holes of Ø8 mm.

6.6 Connecting muff is screwed directly on the connecting pipe of the switch box with the thread G½.

6.7 Carry out metal hose packing by means of the muff very carefully. It is not allowed to shift and turn over the metal hose in the muff.

6.8 Connect the fire-alarm device to the supply voltage in accordance with the diagrams given in Pictures 2 and 3, Appendix A.

6.9 When installing, provide short-circuit current limitation for the fire-alarm power supply: $I_{sc\ max} = 5A$. It is recommended to use redundant power supplies (RPS) produced by LLC „NITA“, Scientific Innovation Company (SIC) “Bolid” or similar ones.

6.10 Carry out installation with the copper-conductor cable with section no less than 0,75 mm².

7. SAFETY PRECAUTIONS

7.1 The observance of safety regulations is a necessary condition for safe operation and fire-alarm device operation.

7.2 The fire alarm device should be used in accordance with the established explosion-proof marking, the requirements of GOST R 52350.14, Electrical Installation Code (the sixth edition, chapter 7.3), and Operational Regulations of Electrical Equipment by Consumer chapter 3.4 and other directory documents, regulating electrical equipment application in explosion hazard zones, and the given certificate.

7.3 Potential application explosion hazard zones, categories and groups of explosive mixtures of gases and vapors with air– in accordance with the requirements GOST R 52350.10 , GOST R 51330.11 and Electrical Installation Code (the sixth edition, chapter 7.3).

7.4 When installing and operating, it is necessary to avoid mechanical effects on the glass surface of the display board.

7.5 To work with installation, check, service and operation of fire-alarm devices specialists should have the industrial training, certification of the qualifying committee, instruction on safe service.

7.6 Maintenance personnel are responsible for the safety regulations.

8. ENVIRONMENT PROTECTION REQUIREMENTS

8.1 Fire-alarm device does not harm the environment when being manufactured, transported, stored, operated and utilized.

8.2 Upon operation time expiration, the fire-alarm devices are utilized without special environment protection measures being taken.

9. MARKING

The marking of the fire-alarm device corresponds to the manufacturer’s drawings and contains:

- name of the manufacturer;
- product identification;
- fire-alarm device number;
- explosion-proof marking IExm[ib]IICT4X according to GOST R 51330.0;
- protection degree "IP65" according to GOST 14254;
- year of production;
- range of temperatures;