ERIDAN

PRODUCT CATALOGUE

DESIGN AND PRODUCTION OF EXPLOSION-PROOF EQUIPMENT

2020

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OUR CLIENTS:

TRANSNEFT ROSNEFT BASHNEFT GAZPROM LUKOIL OIL COMPANY

ABOUT THE COMPANY

Eridan is the leading manufacturer of explosion-proof equipment.

Eridan Company began its operations in 1999 by creating the IP103-2/1 fire detector. The new product was successful, and since then, we have been supplying high quality products to the market for the sole purpose of ensuring the safety of people at industrial facilities, however complex, including those located in the extreme conditions of the Arctic.

Eridan produces equipment developed by the company's design department; the advantages of this equipment include enhanced reliability, ease of installation and compatibility with products of third party manufacturers. These features find daily practical proof, since Eridan branded products are used by over 2,000 companies in Russia, in the CIS countries as well as in Europe and in the Middle East.

Our company has its own production facilities and has established cooperation channels with R&D institutes and other agencies within the structures of GAZPROM PJSC, OC Lukoil PJSC, Transneft PJSC, TNK PJSC, Public Corporation Rosatom, the Emercom of the RF, Russian Railways OJSC and other federal level companies.

We have established our dealership network in the biggest cities of Russia and the CIS:

- Almaty
- Almetievsk
- Atyrau
- Voronezh
- Ekaterinburg
- Kazan
- Karaganda
- Krasnodar
- Minsk
- Moscow
- Naberezhnye Chelny
- Nizhnekamsk;
- Novosibirsk
- Nur-Sultan
- Omsk
- Perm
- Rostov-on-Don
- Samara
- Saint Petersburg
- Saratov
- Tashkent
- Tomsk
- Khabarovsk
- Ufa, etc.

We promote our products in the market following the principles of customer orientation, open pricing policy and prompt performance of orders (provided quality of our work is not compromised by its speed).

Thanks to a comprehensive analysis of the current market of explosion-proof equipment as well as to our experience, we are able to specifically look for certain new technical solutions, and, moreover, to find, implement and put them into practice of the industry. Currently, our portfolio includes 12 product types with thirty modifications, but development of new products and systems never stops. For example, the Dialog-Ex analog-addressable system based on the Dozor-1A FACIE and designed jointly with NITA Company has found successful application at a number of explosive facilities (OC KazMunaiGaz JSC, Gazprom PJSC, etc.).

One of our priority activities is a series of TVK-07 explosion-proof casings. They are specifically designed for video surveillance systems, and aluminum as well as low carbon and stainless steel are used as structural materials for the models TVK-07-A/V/S/N, in order to ensure high strength and reliability during operation within the temperature range from -60 to 200°C. Modification TVK-07-S/N-IK30/120 and the infrared spotlight IK-07e designed specifically for limited visibility applications as well as the TOR and Modbus software offer additional opportunities.

Applied materials, structural elements and parameters of the manufactured products meet the strict requirements of the Marine and River Registers of Shipping and are widely used at offshore drilling platforms, oil tankers and shore infrastructure of sea and river ports.

Each product we make is subjected to several levels of quality control at all production stages, from procurement of components through final climatic tests that enable us to offer the warranty period of 5 years. Meanwhile, the actual service life of the products is minimum 10 years.

Our technology meets the rigid requirements of the quality management system GOST R ISO 9001-2015. Besides, Eridan has been entered into the Register of Reliable Partners of the Chamber of Commerce and Industry of the Russian Federation, which means that our brand name is highly appreciated. In 2019, the Ministry of Industry and Trade of Russia declared our company's production as Russian. This gives us the right to use the entire range of Eridan products in the import substitution programs at particularly hazardous facilities.

In the same year, our company obtained Intergazcert VCS Certificates for our products, quality management system and goodwill assessment. This high rating gives us the opportunity to include our products into the Gazprom Register of Vendors of Materials and Equipment and supply equipment to its facilities.

However, for us, the principal driver is the personal motivation of each employee, which, in combination with high responsibility, brings great results!

We will be happy to answer any question you may have. Contact us: telephone +7 (343) 351-05-07 (multichannel); e-mail: market@eridan-zao.ru





PICTOGRAM LEGEND

1ExdIIC T6 X	Explosion proofness marking
IP67	Ingress protection rating
-60°+60°C	Operating temperature range, °C
	IR lighting
	Light indication
10 modes	Number of operation modes
	Glow color
	Light + sound
100 dB	Level of acoustic pressure
5 J	Flare pulse energy
50 000 lx	Light-signal contrast
3 IR IR/UV	Radiation spectrum
Modbus RTU/ Dozor	Supported protocol

78x220 mm	Effective internal volume
3 hours	Continuous operation time
130 170 105 mm	Max. overall dimensions, mm
9 kg	Max. weight, kg
	Visor
850 nm	Emission wavelength, nm
30°, 50° 70°, 120°	Viewing angle
Aluminum/ Steel	Enclosure material
8-28 V	Supply voltage, V
20 mA	Maximum current consumption, A
50W	Power
10 years	Lifetime, min., years
5 years	Warranty period, years

PICTOGRAM LEGEND

	Cold start mode
360°	Turning angle, degree
0,6 MPa	Operating air pressure
30 M	Elevation difference of installation between the valve unit and the washer tank, max., m
Ex	Explosion proofness certification
Ex	ATEX certification
	Fire safery certification
EAC	Certificate of compliance with the Technical Regulations of the Customs Union
ISO 9001:2015	The management system of the company meets the requirements of GOST ISO 9001-2015
GAZPROM	Stock item identification guide MTR Gazprom PJSC
	Certificate of type approval of the Russian Maritime Register of Shipping

	USB port
IP camera	Furnishing with a videocamera
	Protection from overheating
Step 1	Dirt knocking off with high pressure liquid jet
Step 2	Drying with high pressure air
IGC INTERGAZCERT	Voluntary certification certificate «INTERGAZCERT»
TRANSNEFT	Equipment and material list of Transneft, PJSC
ROSNEFT	MTR OC Rosneft PJSC suppliers data base
TP BY	Certificate of compliance with the requirements TR 2009/013/BY of the Republic of Belarus
	Permir for use in the Reoublic of Kazakhstan
	Certificate of type approval of the Russian Inland Register of Shipping

DETECTORS

Detectors are the most important elements of the fire alarm and automation systems. Fire detectors are technical devices installed directly at the protected facility and designed to transmit fire alarm notification to the fire detection control panel. The detector detects fire by controlling changes in the physical environmental parameters caused by the fire. The fire detectors are not measuring instruments.

They may be installed in open spaces and enclosed areas of different buildings and structures, as well as on river and sea-going vessels and production facilities, where explosive mixtures of air and combustible gases or vapors may be present.

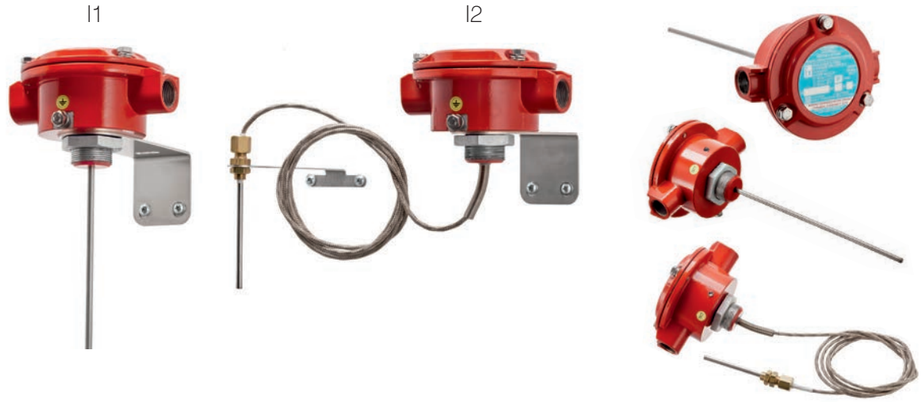
The detectors may be used at chemical, oil and gas production, oil and gas processing and other plants with explosion hazardous areas.

IP103-2/1 and IP101-07

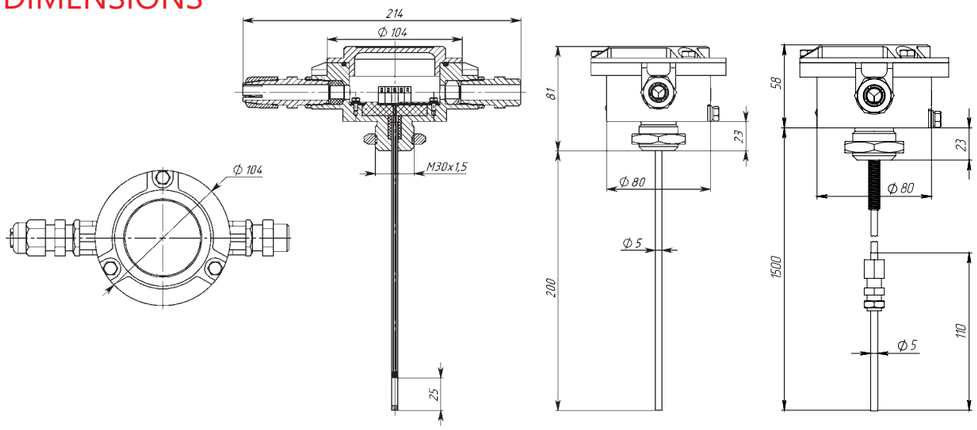
Explosion-proof heat fire detectors

Explosion-proof heat fire detectors are applied in fire alarm systems and designed for detection of any inflagration followed by temperature rising within the monitored area and for transferring to a a top level instrument or device of the temperature value, as well as for detection of fire signs in case the ambient temperature exceeds the preset threshold and/or the temperature growth rate.
They are used at chemical, oil and gas production, oil and gas processing industry enterprises and in explosion hazardous areas of other production facilities.

I1 I2



DIMENSIONS



VERSIONS OF THE SENSING ELEMENT:

Versions	Version 1 (I1)	Version 2 (I2, upon request)
Sensing element length	0.2 meter long tube	Flexible external sensitive element, 1.5-30 m (upon request)

1Ex db [ia Ga] IIC T6...T4 Gb X | 0Ex ia IIC T6...T2 Ga X | IP66/ IP67 | -60°+250°C | 20 mA | 8-28 V | Aluminum | 5 years | 10 years

MODIFICATIONS:

IP103-2/1-TR Explosion-proof heat fire detector	The detector unit is designed for sending an alarm signal to the fire alarm loop in case the preset actuation temperature in the controlled environment is exceeded. This detector is passive and therefore non-current consuming. It can be used in class 0 explosive areas if connected to spark-safe circuits.
IP101-07e Explosion-Proof Heat Fire Detector	The detector unit is designed for sending an alarm signal to the fire alarm loop in case the preset actuation temperature in the controlled environment is exceeded.
IP101-07a Explosion-Proof Addressable Programmable Heat Fire Detector	It is designed for detection of any inflagration followed by temperature rising within the monitored area and for transferring to a receiving and controlling instrument of the current temperature value, as well as for detection of fire signs in case the ambient temperature exceeds the preset threshold and/or the temperature growth rate. It is designed for operation only as part of addressable loop of devices with support of Dozor-07a protocol.
IP101-07em Adjustable Explosion-Proof Heat Fire Detector	The detector unit is designed for sending an alarm signal to the fire alarm loop in case the preset actuation temperature in the controlled environment is exceeded. This detector is provided with the option of readjustment of the actuation temperature at its operation site without altering the loop parameters.
IP101-07md Maximum Differential Explosion-Proof Heat Fire Detector	The detector unit is designed for sending an alarm signal to the fire alarm loop in case the preset actuation temperature in the controlled environment is exceeded. Availability of variation channel allows detecting combustion at early stages.
IP101-07vt High-Temperature Explosion-Proof Heat Fire Detector	The detector unit is designed for sending an alarm signal to the fire alarm loop in case the preset actuation temperature in the controlled environment is exceeded. Thanks to spatial separation of the detector's body with electronic components from the sensing element, it is possible to monitor the controlled environment up to +250°C.
IP101-07a-RS Addressable Programmable Explosion-Proof Heat Fire Detector (Modbus RTU protocol)	The detector is applied in fire alarm systems or in supervisory control and data acquisition systems. The detector is designed for detection of any inflagration followed by temperature rising within the monitored area and for transferring to a top level instrument or device of the temperature value, as well as for detection of fire signs in case the ambient temperature exceeds the preset threshold and/or the temperature growth rate. It is designed for transferring digital data signal via standard communication channel RS-485 with Modbus RTU protocol.

TECHNICAL DATA:

Modification	IP103-2/1-TR (-OE) Explosion-Proof Heat Fire Detector	IP101-07e Explosion-Proof Heat Fire Detector	IP101-07a (I1, I2) Explosion-Proof Addressable Programmable Heat Fire Detector
			
Enclosure explosion proofness marking	0Ex ia IIC T6...T5 Ga X 1Ex db IIC T6...T5 Gb X Ex tb IIIC T85°C...T100°C Db X	1Ex db [ia Ga] IIC T6...T4 Gb X Ex tb [ia Da] IIIC T85°C...T135°C Db X	1Ex db [ia Ga] IIC T6...T4 Gb X Ex tb [ia Da] IIIC T85°C...T135°C Db X
Explosion proofness marking of the terminal/ external sensing element	0Ex ia IIC T6...T5 Ga X 1Ex db ia IIC T6...T5 Gb X Ex tb IIIC T85°C...T100°C Db X	0Ex ia IIC T6...T4 Ga X Ex ia IIIC T85°C...T135°C Da X	0Ex ia IIC T6...T4 Ga X Ex ia IIIC T85°C...T135°C Da X
Ingress protection rating	IP66/ IP67	IP66/ IP67	IP66/ IP67
Actuation temperature, °C;	+64...100	+54...130	+54...130
Temperature class of setting	A3, B, C	A1, A2, A3, B, C, D, E	A1, A2, A3, B, C, D, E
Operating conditions: Operating temperature, °C Monitored area temperature, °C	T5: -60...100 T6: -60...80 -35...80	-60...115 -60...130	-60...130 -60...130
Readjustment of detector's temperature at the installation site	No	No	Yes, with 2°C increment (by means of the console menu)
Possibility of connection to addressable loop	Yes (by means of setting the address marks)	Yes (by means of setting the address marks)	Yes (via the Dozor-07a protocol) Maximum number of addressable devices to be connected: 255
Supported protocol			Dozor-07a
Maximum current consumption, mA	0	In standby mode - 0.03 In activation mode - 0.05 OE - 0.05	1,0
Supply voltage, V	6...28 (without OE)	8...28	15...39
Max. overall dimensions (without cable glands), mm	128*281*104	128*104*81	128*104*81
Max. sensing element tube length, mm	200±2	200±2	I1: 200±2 I2: 1.5 to 30 m (upon request)
Enclosure material	Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ
Sensing element material	Stainless steel	Stainless steel	Stainless steel
Light indication	No	Yes	Yes
Number of cable glands in the enclosure	2	2	2
Max. cable entry diameter, mm	6...12 (into equipment body) up to 22 (along the external insulation)	6...12 (into equipment body) up to 22 (along the external insulation)	6...12 (into equipment body) up to 22 (along the external insulation)
Detector installation mode	Bracket for mounting of the detector body (optional)	Bracket for mounting of the detector body (optional)	Bracket for mounting of the detector body (optional); for I2, bracket for mounting of the external sensing element (optional)
Check of detector's functionality	Is possible without disassembly at the installation site by means of the Ex-TEST instrument	Is possible without disassembly at the installation site by means of the Ex-TEST instrument	FACP polling each 3-5 sec. Is possible without disassembly at the installation site by means of magnetic key (included in the supply package) and/or the Ex-TEST instrument
Available packages	Bracket, input devices	Bracket, input devices	External sensing element, brackets, input devices
Max. weight, kg	1,0	1,1	1,1
Lifetime, min., years	10	10	10
Warranty period, years	5	5	5

TECHNICAL DATA:

IP101-07em (I1, I2) Adjustable Explosion-Proof Heat Fire Detector	IP101-07md (I1, I2) Maximum Differential Explosion-Proof Heat Fire Detector	IP101-07vt High-Temperature Explosion-Proof Heat Fire Detector	IP101-07a-RS (I1, I2) Addressable Programmable Explosion-Proof Heat Fire Detector (Modbus RTU protocol)
			
1Ex db [ia Ga] IIC T6...T4 Gb X Ex tb [ia Da] IIIC T85°C...T135°C Db X	1Ex db [ia Ga] IIC T6...T4 Gb X Ex tb [ia Da] IIIC T85°C...T135°C Db X	1Ex db [ia Ga] IIC T6...T4 Gb X Ex tb [ia Da] IIIC T85°C...T135°C Db X	1Ex db [ia Ga] IIC T6...T4 Gb X Ex tb [ia Da] IIIC T85°C...T135°C Db X
0Ex ia IIC T6...T4 Ga X Ex ia IIIC T85°C...T135°C Da X	0Ex ia IIC T6...T4 Ga X Ex ia IIIC T85°C...T135°C Da X	0Ex ia IIC T6...T2 Ga X Ex ia IIIC T85°C...T250°C Da X	0Ex ia IIC T6...T4 Ga X Ex ia IIIC T85°C...T135°C Da X
IP66/ IP67	IP66/ IP67	IP66/ IP67	IP66/ IP67
+54...130	+54...130	+54...250	+54...130
A1, A2, A3, B, C, D, E	A1R, A2R, A3R, BR, CR, DR, ER	A1, A2, A3, B, C, D, E, F, G, H1, H2	A1, A2, A3, B, C, D, E
-60...130 -60...130	-60...130 -60...130	-60...115 -60...250	-60...130 -60...130
Yes, with increments of 3-5°C (by means of installation of the resistor in the terminals)	No, possible values of the differential channel 5, 10, 20, 30° C/min	No	Yes, with increments of 1-2°C (via PC) Possible values of the differential channel 5, 10, 20, 30°C/min
Yes (by means of setting the address marks)	Yes (by means of setting the address marks)	Yes (by means of setting the address marks)	Yes (in case of transferring of signal via communication channel RS-485 with Modbus RTU protocol). Maximum number of addressable devices to be connected: 32
			Modbus RTU
0,2	0,2	0,2	In standby mode - 5 In activation mode - 10 During polling - 20
8...28	8...28	8...28	8...28
128*104*81	128*104*81	128*104*81	128*104*81
I1: 200±2 I2: 1.5 to 30 m (upon request)	I1: 200±2 I2: 1.5 to 30 m (upon request)	1.5 to 30 m (upon request)	I1: 200±2 I2: 1.5 to 30 m (upon request)
Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ
Stainless steel	Stainless steel	Stainless steel	Stainless steel
Yes	Yes	Yes	Yes
2	2	2	2
6...12 (into equipment casing) up to 22 (along the external insulation)	6...12 (into equipment casing) up to 22 (along the external insulation)	6...12 (into equipment casing) up to 22 (along the external insulation)	6...12 (into equipment casing) up to 22 (along the external insulation)
Bracket for mounting of the detector body (optional); for I2, bracket for mounting of the external sensing element (optional)	Bracket for mounting of the detector body (optional); for I2, bracket for mounting of the external sensing element (optional)	Bracket for mounting of the detector body (optional); for I2, bracket for mounting of the external sensing element (optional)	Bracket for mounting of the detector body (optional); for I2, bracket for mounting of the external sensing element (optional)
Is possible without disassembly at the installation site by means of magnetic key (included in the supply package) and/or the Ex-TEST instrument	Is possible without disassembly at the installation site by means of the Ex-TEST instrument	Is possible without disassembly at the installation site by means of the Ex-TEST instrument (up to 150°C)	Is possible without disassembly at the installation site by means of the Ex-TEST instrument
External sensing element, brackets, input devices	External sensing element, brackets, input devices	Brackets, input devices	External sensing element, brackets, input devices
1,1	1,1	1,1	1,1
10	10	10	10
5	5	5	5

IP535-07e

Explosion-Proof Fire Call Points

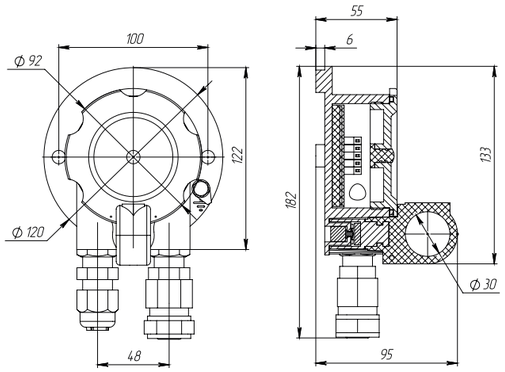
The explosion-proof fire call point IP535-07e is used in fire alarm and fire extinguishing systems and designed for manual activation of fire alarm signal in explosive areas or general industrial purpose areas.
It is used at chemical, oil and gas production, oil and gas processing industry enterprises and in explosive areas of other production facilities.

A

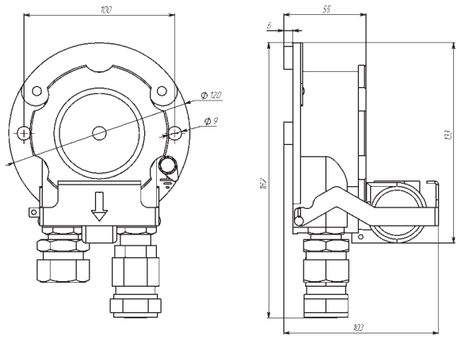
B

DIMENSIONS

IP535-07e-A



IP535-07e-B



CALL POINT CLASSES:

IP535-07e-A: explosion-proof fire call point with one-step activation
IP535-07e-B: explosion-proof fire call point with several-step activation

1Ex db IIC T6 Gb | IP66/ IP67 | -60°+85°C | 70 µA | 0,1 sec Response time | Vandal-proof | Aluminum | 5 years | 10 years

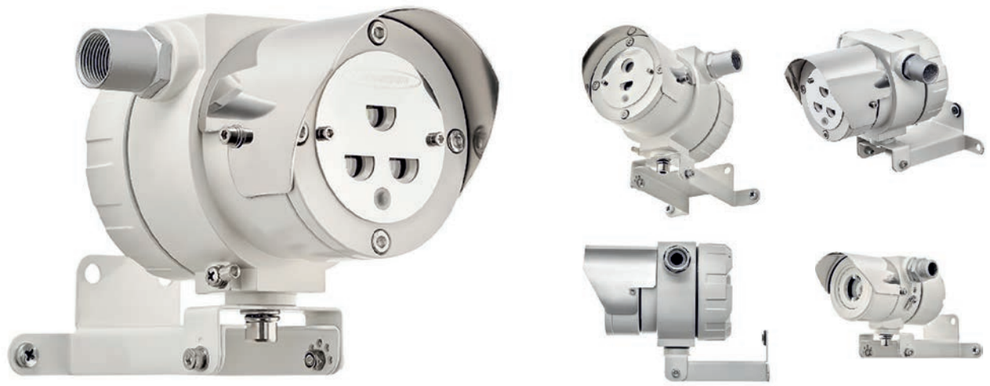
TECHNICAL DATA:

Modifications	IP535-07e (A, B) Explosion-Proof Fire Call Point	IP535-07ea (A, B) Explosion-Proof Addressable Fire Call Point	IP535-07ea-RS (A, B) Explosion-Proof Addressable Fire Call Point
			
Enclosure explosion proofness marking	1Ex db IIC T6 Gb	1Ex db IIC T6 Gb	1Ex db IIC T6 Gb
Ingress protection rating	IP66/ IP67	IP66/ IP67	IP66/ IP67
Operating temperature range, °C	-60...85	-60...85	-60...85
Maximum current consumption, max., µA	70	1,0	Standby mode - 5 In activation mode - 10 During polling - 20
Supply voltage, V	8...28	15...39	8...28
Driving element	Magnetically-controlled, vibration-resistant, shock-proof	Magnetically-controlled, vibration-resistant, shock-proof	Magnetically-controlled, vibration-resistant, shock-proof
Possibility of connection to addressable loop	Yes (by means of setting the address marks)	Yes (via the Dozor-07a protocol) Maximum number of addressable devices to be connected: 255	Yes (in case of transferring of signal via communication channel RS-485 with Modbus RTU protocol) Maximum number of addressable devices to be connected: 32
Supported protocol		Dozor-07a	Modbus RTU
Max. overall dimensions (without cable glands and bracket), mm	120*135*110	120*135*110	120*135*110
Enclosure material	Aluminum alloy AK 12 ПЧ Vandal-proof design	Aluminum alloy AK 12 ПЧ Vandal-proof design	Aluminum alloy AK 12 ПЧ Vandal-proof design
Light indication	Yes	Yes	Yes
Number of cable glands in the enclosure	2	2	2
Max. cable entry diameter, mm	6...12 (into equipment casing) up to 22 (along the external insulation)	6...12 (into equipment casing) up to 22 (along the external insulation)	6...12 (into equipment casing) up to 22 (along the external insulation)
Detector installation mode	To the surface by means of the mounting hole with the cable glands facing down	To the surface by means of the mounting hole with the cable glands facing down	To the surface by means of the mounting hole with the cable glands facing down
Available packages	Input devices, visor (optional)	Input devices, visor (optional)	Input devices, visor (optional)
Max. weight, kg	1,0	1,0	1,0
Lifetime, min., years	10	10	10
Warranty period, years	5	5	5

IPP-07e Gelios

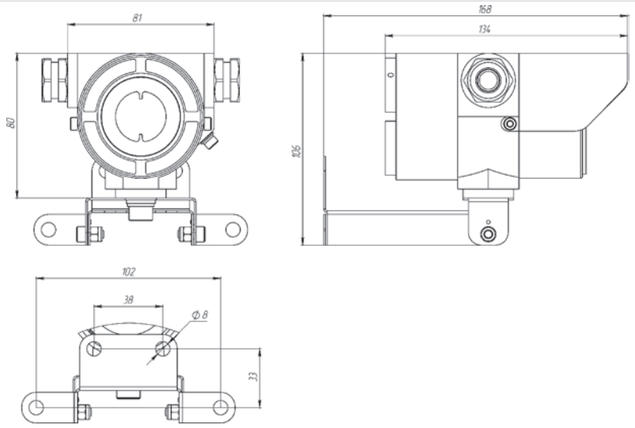
Explosion-Proof Flame Fire Detectors

The detector is designed for detection of flame outbreaks followed by electromagnetic radiation of the flame source, smoldering or initial phase of explosive process formation in outdoor areas, covered premises of various buildings and structures as well as river and maritime ships and industrial facilities that may contain explosive mixtures of flammable gas and vapors with air. The detector is equipped with sensing elements, i.e. infrared (IR) and ultraviolet (UV) receivers. It is used at chemical, oil and gas production, oil and gas processing industry enterprises and in explosive areas of other production facilities.



SIZES AND MODIFICATIONS:

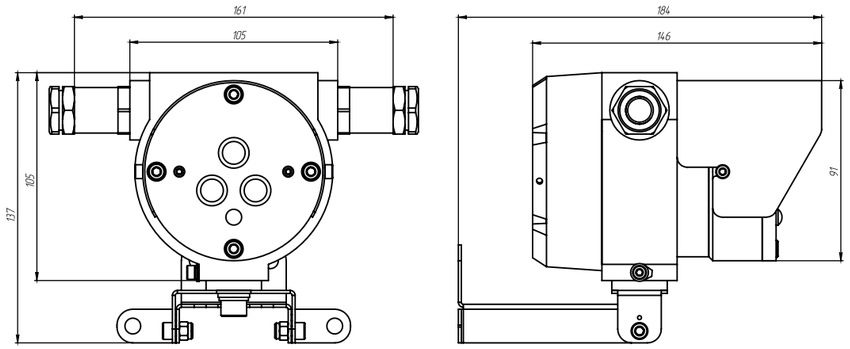
IPP-07e-330-1/2 Explosion-Proof Flame Fire Detector Gelios - 2 IK	It is designed for detection of flame outbreaks followed by electromagnetic radiation of the flame source, smoldering or initial phase of explosive process formation in outdoor areas, covered premises of various buildings and structures as well as river and maritime ships and industrial facilities that may contain explosive mixtures of flammable gas and vapors with air. Versions: 1. I1:IPP-07e-I1-330-1/2 - standard version of the detector 2. I2:IPP-07e-I2-330-1/2 - the detector remains operational under the conditions of direct sun striking of up to 70,000 lx 3. I3:IPP-07e-I3-330-1/2 - the detector remains operational when there are hot objects with surface temperature of up to 250°C within its viewing field



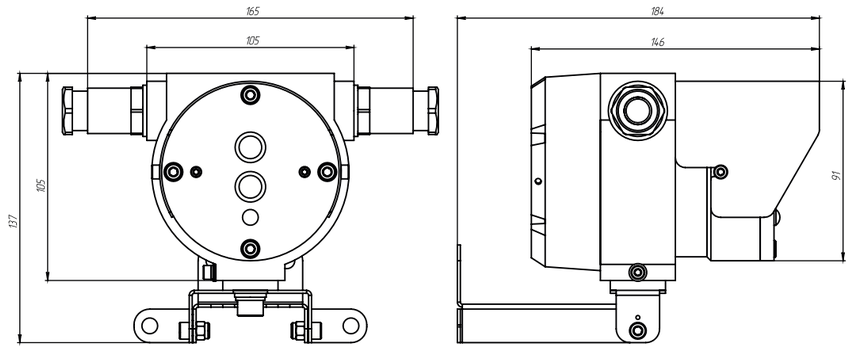
1Ex d IIC T6 Gb	IP66/ IP67	-60°+55°C	2 IR	3 IR	IR/UV	Modbus RTU	90°	Aluminum	5 years

MODIFICATIONS:

IPP-07ea-330-1 Explosion-Proof Addressable Flame Fire Detector Gelios - 3 IK	Multirange flame detector for detection of ignition of various substances based on electromagnetic radiation of flame in IR band (three infrared sensors are available). The detector is designed for application only as part of addressable loop of instruments supporting the Dozor-07a protocol
IPP-07ea-RS-330-1 Explosion-Proof Flame Fire Detector Gelios - 3 IK RS	Multirange flame detector for detection of ignition of various substances based on electromagnetic radiation of flame in IR band (three infrared sensors are available). The detector can be used in fire alarm systems for generation and sending of alarm signals to fire alarm control panels (FACP) or in automatic process control systems for transferring of digital data signal via the standard communication channel RS-485 with Modbus RTU protocol



IPP-07ea-329/330-1 Explosion-proof addressable flame fire detector Gelios - IK/UF	Multirange flame detector for detection of ignition of various substances based on electromagnetic radiation of flame in UV and IR bands (ultraviolet and infrared sensors are available). The detector is designed for application only as part of addressable loop of instruments supporting the Dozor-07a protocol
IPP-07ea-RS-329/330-1 Explosion-proof flame fire detector Gelios - IK/UF RS	Multirange flame detector for detection of ignition of various substances based on electromagnetic radiation of flame in UV and IR bands (ultraviolet and infrared sensors are available). The detector can be used in fire alarm systems for generation and sending of alarm signals to fire alarm control panels (FACP) or in automatic process control systems for transferring of digital data signal via the standard communication channel RS-485 with Modbus RTU protocol



TECHNICAL DATA:

Modification	IPP-07e-330-1/2 (I1, I2, I3) Explosion-Proof 2 IR Flame Fire Detector	IPP-07ea-330-1 Explosion-Proof Addressable 3 IR Flame Fire Detector
		
Enclosure explosion proofness marking	1Ex d IIC T6 Gb	1Ex d IIC T6 Gb
Ingress protection rating	IP66/ IP67	IP66/ IP67
Operating temperature range, °C	-60...55	-60...55
Max. response time, sec.	3	5/10
Maximum current consumption, mA	Standby mode - 0.11 In activation mode - 0.25	From addressable loop - 2.0 From external power supply source - 20 From external power supply source with the heating on - 200
Supply voltage, V	8...28	15...39 (remains operational at 8...28)
Viewing angle, min., °	70	90
Activation range in case the source is deflected from the optical axis		Deflection angle, deg. / Stable activation distance, % 0 / 100 ±15 / 96 ±30 / 86 ±45 / 71
Sensitivity, min., m	TP-5 (H-heptane), TP-6 (ethyl alcohol) - 25	TP-5 (H-heptane), TP-6 (ethyl alcohol) - 25
Control of the inspection window glass contamination	Yes	Yes
Functionality without false alerts with max. background illumination, lx	From fluorescent light sources - 2,500 From incandescent lamps - 250 Direct sun illumination - I1, I3 - 2,500; I2 - 70,000	From fluorescent light sources - 6,500 From incandescent lamps - 2,500 Visible light spectrum - 80,000
Possibility of connection to addressable loop	Yes (by means of setting the address marks)	Yes (via the Dozor-07a protocol) Maximum number of addressable devices to be connected: 255
Supported protocol		Dozor-07a
Max. overall dimensions (without cable glands and bracket), mm	87*81*144	146*105*110
Enclosure material	Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ
Light indication	Yes	Yes
Number of cable glands in the enclosure	2	2
Cable entry diameter, mm	6...12 (into equipment casing) up to 22 (along the external insulation)	6...12 (into equipment casing) up to 22 (along the external insulation)
Detector installation mode	Bracket (included in the supply package), long bracket (optional)	Bracket (included in the supply package), long bracket (optional)
Available packages	Input devices, long bracker (optional), test lantern (optional)	Input devices, long bracker (optional), test lantern (optional)
Max. weight, kg	1,0	1,6
Lifetime, min., years	10	10
Warranty period, years	5	5

TECHNICAL DATA:

IPP-07ea-RS-330-1 Explosion-Proof 3 IR Flame Fire Detector	IPP-07ea-329/330-1 Explosion-Proof Addressable IR/UV Flame Fire Detector	IPP-07ea-RS-329/330-1 Explosion-Proof IR/UV Flame Fire Detector
		
1Ex d IIC T6 Gb	1Ex d IIC T6 Gb	1Ex d IIC T6 Gb
IP66/ IP67	IP66/ IP67	IP66/ IP67
-60...55	-60...55	-60...55
5/10	IR channel - 10 UV channel - 4	IR channel - 10 UV channel - 4
Standby mode - 20 In activation mode - 30 During polling - 50 When heating is on - 200	From addressable loop - 2.0 From external power supply source - 20 From external power supply source with the heating on - 200	Standby mode - 20 In activation mode - 30 During polling - 50 When heating is on - 200
8...28	15...39 (remains operational at 8...28)	8...28
90	90	90
Deflection angle, deg. / Stable activation distance, % 0 / 100 ±15 / 96 ±30 / 86 ±45 / 71	Deflection angle, deg. / Stable activation distance, % 0 / 100 ±15 / 96 ±30 / 86 ±45 / 71	Deflection angle, deg. / Stable activation distance, % 0 / 100 ±15 / 96 ±30 / 86 ±45 / 71
TP-5 (H-heptane), TP-6 (ethyl alcohol) - 25	TP-5 (H-heptane), TP-6 (ethyl alcohol) - 25	TP-5 (H-heptane), TP-6 (ethyl alcohol) - 25
Yes	Yes	Yes
From fluorescent light sources - 6,500 From incandescent lamps - 2,500 Visible light spectrum - 80,000	From fluorescent light sources - 2,500 From incandescent lamps - 250 Visible light spectrum - 80,000	From fluorescent light sources - 2,500 From incandescent lamps - 250 Visible light spectrum - 80,000
Yes (in case of transferring of signal via communication channel RS-485 with Modbus RTU protocol) Maximum number of addressable devices to be connected: 32	Yes (via the Dozor-07a protocol) Maximum number of addressable devices to be connected: 255	Yes (in case of transferring of signal via communication channel RS-485 with Modbus RTU protocol) Maximum number of addressable devices to be connected: 32
Modbus RTU	Dozor-07a	Modbus RTU
146*105*110	146*105*110	146*105*110
Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ
Yes	Yes	Yes
2	2	2
6...12 (into equipment casing) up to 22 (along the external insulation)	6...12 (into equipment casing) up to 22 (along the external insulation)	6...12 (into equipment casing) up to 22 (along the external insulation)
Bracket (included in the supply package), long bracket (optional)	Bracket (included in the supply package), long bracket (optional)	Bracket (included in the supply package), long bracket (optional)
Input devices, long bracket (optional), test lantern (optional)	Input devices, long bracket (optional), test lantern (optional)	Input devices, long bracket (optional), test lantern (optional)
1,6	1,6	1,6
10	10	10
5	5	5

ANNUNCIATORS

Fire warning and evacuation management system is a mandatory fire-safety element of any facility. It is designed to inform people of an emergency situation and organization of safe exit to a safe place. Fire annunciaroes, as its elements, are technical means intended to inform people about fire by emitting a light, acoustic or voice signal or their combination in order to draw people's attention to the information being delivered. They exercise several functions at the same time: send various fire signals, activate lighting on evacuation signs and set up communication with the dispatch center.

They may be installed in open spaces and enclosed areas of different buildings and structures, as well as on river and sea-going vessels and production facilities, where explosive mixtures of air and combustible gases or vapors may be present.

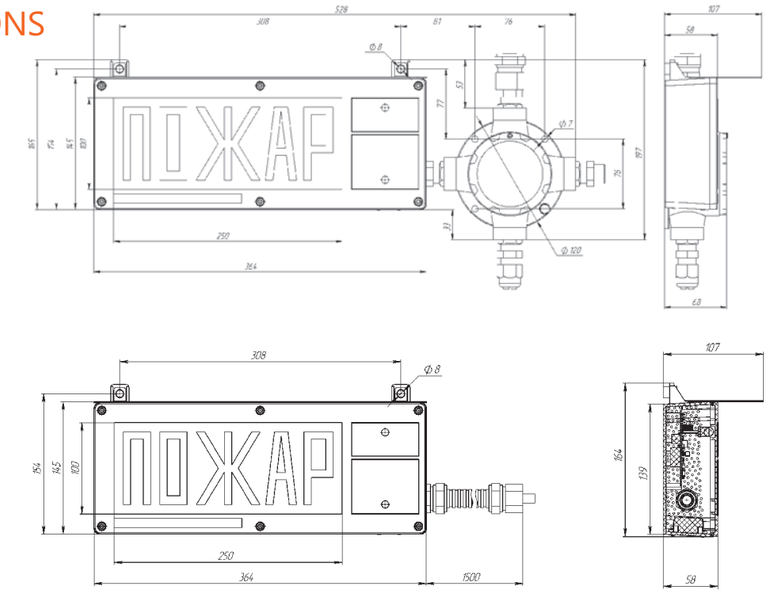
The annnunciators may be used at chemical, oil and gas production, oil and gas processing and other plants with explosion hazardous areas.

EKRAN (panel)

Fire annunciators

The explosion-proof annunciator and indicator (panel) EKRAN is designed to be used as a light and light and acoustic means of notification and information indicator; it provides light and/or acoustic signal in explosive areas. It is used at chemical, oil and gas production, oil and gas processing industry enterprises and in explosive areas of other production facilities.

DIMENSIONS



1Ex d mb [ib] IIC T4 Gb X | IP66 | -60°+75°C | 12-24, 230 V | 15 mA | 100 dB | 3 hours

MODIFICATIONS:

EKRAN-S/SU	Explosion-proof light fire annunciator/ light indicator with permanent cable in metal hose
EKRAN-SZ	Explosion-proof light and acoustic fire annunciator with permanent cable in metal hose
EKRAN-S/SZ/SU-K1/K2/K3/K4	Explosion-proof fire annunciator with additional section with permanent cable in metal hose Version of the additional section of the annunciator: K1 - annunciator without additional section K2 - annunciator with an additional light section K3 - annunciator with an additional acoustic section (excepting EKRAN-SZ) K4 - annunciator with an additional light and acoustic section (excepting EKRAN-SZ)
EKRAN-KKV	Explosion-proof fire annunciator with permanent external explosion-proof terminal box
EKRAN-a (KKV)	Explosion-proof addressable fire annunciator
EKRAN-O (a, KKV)	General-purpose industrial fire annunciator

CURRENT CONSUMPTION, MA

Consumption of the main section *

Supply voltage, V	Glow mode	EKRAN-S/SU		EKRAN-SZ	
		Yellow and red glow	White glow	Yellow and red glow	White glow
12VDC	Bright	180	150	190	170
	Reduced consumption	110	95	120	110
24VDC	Bright	110	100	110	100
	Reduced consumption	75	70	80	75
230VAC	Bright	20	20	20	20
	Reduced consumption	15	15	15	15

Consumption of additional section *

Supply voltage, V	Additional section K2 (light)	Additional section K3 (acoustic)	Additional section K4 (light and acoustic)
12VDC	40	45	55
24VDC	45	50	55
230VAC	5	5	5

* Indicated current includes current consumption of the control circuit equal to 7.5 mA at 12 VDC (15 mA at 24 VDC)

TECHNICAL DATA:

Modification	EKRAN-S/SU Explosion-proof light fire annunciator/ light indicator	EKRAN-SZ Explosion-proof light and acoustic fire annunciator	EKRAN-K2/K3/K4 Explosion-proof fire annunciator with additional section
			
Enclosure explosion proofness marking	1Ex mb [ib] IIC T4 Gb X	1Ex mb [ib] IIC T4 Gb X	1Ex mb [ib] IIC T4 Gb X
Ingress protection rating	IP66	IP66	IP66
Operating temperature range, °C	-60...75	-60...75	-60...75
Supply voltage, V	24 VDC / 230 VAC	24 VDC / 230 VAC	24 VDC / 230 VAC
Availability of power supply circuit control (for 24 VDC)	Yes (not installed upon request)	Yes (not installed upon request)	Yes (not installed upon request)
Maximum current consumption, mA	'Bright' mode: 12 VDC - 150...180 24 VDC - 100...110 230 VAC - 20 'Reduced consumption' mode: 12 VDC - 95...110 24 VDC - 70...75 230 VAC - 15	'Bright' mode: 12 VDC - 170...190 24 VDC - 100...110 230 VAC - 20 'Reduced consumption' mode: 12 VDC - 110...120 24 VDC - 75...80 230 VAC - 15	'Bright' mode: 12 VDC - 190...245 24 VDC - 145...165 230 VAC - 25 'Reduced consumption' mode: 12 VDC - 135...175 24 VDC - 115...135 230 VAC - 20
Level of acoustic pressure, min., dB		100	100 (for SZ, K3, K4 versions)
Acoustic signal type		Siren	Siren (for SZ, K3, K4 versions)
Available acoustic modes		Tone 1 / Tone 2 (self-initiated switching is possible)	Tone1 / Tone 2 (for SZ, K3, K4 versions)
Frequency range of generated acoustic signals, kHz		1,0...4,5	1,0...4,5 (for SZ, K3, K4 versions)
Light source	LEDs	LEDs	LEDs
Light channel flashing frequency, Hz	0,5...2,0	0,5...2,0	0,5...2,0
Available glow modes	Flashing light / Constant glow (self-initiated switching is available)	Flashing light / Constant glow (self-initiated switching is available)	Flashing light / Constant glow (self-initiated switching is available)
Available glow colors: - display text colors	- Red, yellow, blue, white (or upon request)	- Red, yellow, blue, white (or upon request)	- Red, yellow, blue, white (or upon request)
- background color	- Black, red, green, white	- Black, red, green, white	- Black, red, green, white
Maximum duration of continuous operation of the annunciator in acoustic signal generation mode, hours		3,0	3,0
Possibility of connection to addressable loop	Yes (by means of connecting the address marks via the switch box)	Yes (by means of connecting the address marks via the switch box)	Yes (by means of connecting the address marks via the switch box)
Supported protocol			
Max. overall dimensions, mm - body (without visor and cable) - information field - cable/metal hose length	390*170*60 250*100 1,5 м	390*170*60 250*100 1,5 м	390*170*60 250*100 1,5 м
Enclosure material	Impact-resistant polycarbonate	Impact-resistant polycarbonate	Impact-resistant polycarbonate
Number of cable glands in the annunciator body	The permanent cable in 1.5 m long metal hose with a G1/2" coupling at the end comes out of the annunciator	The permanent cable in 1.5 m long metal hose with a G1/2" coupling at the end comes out of the annunciator	The permanent cable in 1.5 m long metal hose with a G1/2" coupling at the end comes out of the annunciator
Cable entry diameter, mm			
Installation of the annunciator at site	By means of mounting holes to the surface	By means of mounting holes to the surface	By means of mounting holes to the surface
Available packages	Visor, cable length (optional)	Visor, cable length (optional)	Visor, cable length (optional)
Max. weight, kg	2,5	2,5	2,5
Lifetime, min., years	10	10	10
Warranty period, years	5	5	5

TECHNICAL DATA:

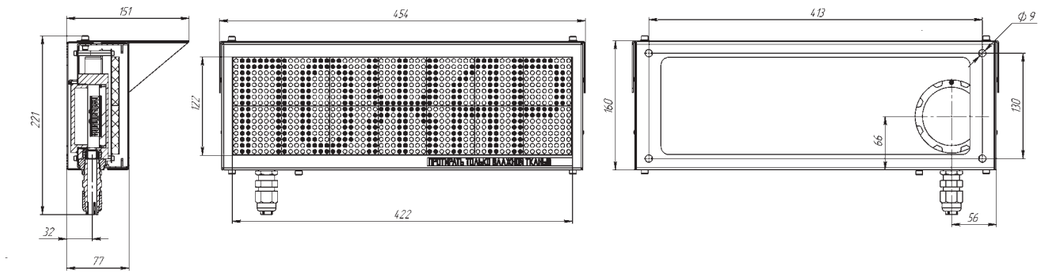
EKRAN-KKV Explosion-proof fire annunciator with permanent external explosion-proof terminal box	EKRAN-a Explosion-proof addressable fire annunciator	EKRAN-O General-purpose industrial fire annunciator
		
1Ex d mb [ib] IIC T4 Gb X	EKRAN - 1Ex mb [ib] IIC T4 Gb X EKRAN-KKV - 1Ex d mb [ib] IIC T4 Gb X	
IP66	IP66	IP66
-60...75	-60...75	-60...75
24 VDC / 230 VAC	From addressable loop - 15...39 (remains operational at 8...28) From external power supply source - 24 VDC	24 VDC / 230 VAC
Yes (not installed upon request)		Yes (not installed upon request)
'Bright' mode: 12 VDC - 150...245 24 VDC - 100..165 230 VAC - 25 'Reduced consumption' mode: 12 VDC - 95...175 24 VDC - 70...135 230 VAC - 20	From addressable loop - 2.0 From external power supply source: 'Bright' mode: 12 VDC 150...225 24 VDC 100...145 'Reduced consumption': 12 VDC - 95...155 24 VDC - 70...105	'Bright' mode: 12 VDC - 150...245 24 VDC - 100...165 230 VAC - 20...25 'Reduced consumption' mode: 12 VDC - 95...175 24 VDC - 70...135 230 VAC - 15...20
100 (for SZ, K3, K4 versions)	100 (for SZ, K3, K4 versions)	100 (for SZ, K3, K4 versions)
Siren (for SZ, K3, K4 versions)	Siren (for SZ, K3, K4 versions)	Siren (for SZ, K3, K4 versions)
Tone 1 / Tone 2 (for SZ, K3, K4 versions)	Tone 1 / Tone 2 (for SZ, K3, K4 versions) changing modes from the FACP is possible	Tone 1 / Tone 2 (for SZ, K3, K4 versions)
1,0...4,5 (for SZ, K3, K4 versions)	1,0...4,5 (for SZ, K3, K4 versions) changing modes from the FACP is possible	1,0...4,5 (for SZ, K3, K4 versions)
LEDs	LEDs	LEDs
0,5...2,0	0,5...2,0	0,5...2,0
Flashing light / Constant glow (self-initiated switching is possible)	Flashing light / Constant glow (self-initiated switching is possible)	Flashing light / Constant glow (self-initiated switching is possible)
- Red, yellow, blue, white (or upon request)	- Red, yellow, blue, white (or upon request)	- Red, yellow, blue, white (or upon request)
- Black, red, green, white	- Black, red, green, white	- Black, red, green, white
3,0	3,0	3,0
Yes (by means of setting the address marks)	Yes (via the Dozor-07a protocol) Maximum number of addressable devices to be connected: 120	Yes (by means of connecting the address marks via the switch box) For EKRAN-a-O version - Yes (via the Dozor-07a protocol)
	Dozor-07a	
530*200*70 250*100 -	390*170*60 (KKV version: 530*200*70) 250*100 1,5 м (not available for the KKV version)	390*170*60 (KKV version: 530*200*70) 250*100 1,5 м (not available for the KKV version)
EKRAN - Impact-resistant polycarbonate KKV - aluminum alloy AK 12 ПЧ	EKRAN - Impact-resistant polycarbonate KKV - aluminum alloy AK 12 ПЧ	EKRAN - Impact-resistant polycarbonate KKV - aluminum alloy AK 12 ПЧ
3	The permanent cable in 1.5 m long metal hose with a G1/2" coupling at the end comes out of the annunciator For the KKV version - 3	The permanent cable in 1.5 m long metal hose with a G1/2" coupling at the end comes out of the annunciator For the KKV version - 3
6...12 (into the equipment enclosure) Up to 22 (along the external insulation)	For the KKV version - 6...12 (into the equipment enclosure) Up to 22 (along the external insulation)	
By means of mounting holes to the surface	By means of mounting holes to the surface	By means of mounting holes to the surface
Input devices, visor	Input devices (for EKRAN-KKV), visor, cable length (optional)	Input devices (for EKRAN-KKV), visor, cable length (optional)
2,5	2,5	2,5
10	10	10
5	5	5

EKRAN-INFO/ EKRAN-INFO RGB Fire

Annunciator

The fire annunciator EKRAN-INFO is designed to be used as a light, acoustic or combined means of notification, information indicator and panel in general address systems, fire alarm and control systems in joint operation with alarm control equipment.
The annunciator EKRAN-INFO-RGB can be used as an illuminated information panel with capability of remote control via RS485 (protocol MODBUS-RTU) communication line. It is used at chemical, oil and gas production, oil and gas processing and shipbuilding industry enterprises and in explosion hazardous areas of other production facilities.

DIMENSIONS



1Ex d mb [ib] IIC T4 Gb X | IP66 | -60°+75°C | 12-24 V | 230 V | 100 dB | up to 512 scenarios

MODIFICATIONS:

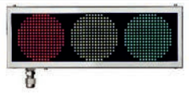
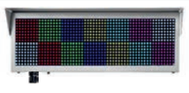
EKRAN-INFO Single-color explosion-proof fire annunciator	The annunciator is designed to be used in explosive environments as a light, acoustic or combined means of notification, information indicator and panel; it provides signals in fire and security alarm systems operating in combination with any receiving and control devices. The annunciator can be used for indication of equipment operation modes and for alerting the personnel in case of emergencies or other situations. One of the following glow colors can be selected: red, yellow or green
EKRAN-INFO-O Single-color general industrial version fire annunciator	The general industrial version annunciator is designed to be used as a light, acoustic or combined means of notification, information indicator and panel; it provides signals in fire and security alarm systems operating in combination with any receiving and control devices. The annunciator can be used for indication of equipment operation modes and for alerting the personnel in case of emergencies or other situations. One of the following glow colors can be selected: red, yellow or green
EKRAN-INFO-RGB Multi-color explosion-proof fire annunciator	The annunciator is designed to be used in explosive environments as a light, acoustic or combined means of notification, information indicator and panel; it provides signals in fire and security alarm systems operating in combination with any receiving and control devices. The annunciator can be used for indication of equipment operation modes and for alerting the personnel in case of emergencies or other situations. It can be used as an all-purpose illuminated information panel with capability of remote control. The annunciator provides multi-colored imaging (7 colors) - red, pink, yellow, green, sky-blue, blue, white
EKRAN-INFO-RGB-a Multi-color explosion-proof addressable fire annunciator	The annunciator is designed to be used in explosive environments as a light, acoustic or combined means of notification, information indicator and panel; it provides signals in fire and security alarm systems operating in combination with FACP Dozor-1A via the Dozor-07a protocol. The annunciator can be used for indication of equipment operation modes and for alerting the personnel in case of emergencies or other situations. It can be used as an all-purpose illuminated information panel with capability of remote control. The annunciator provides multi-colored imaging (7 colors) - red, pink, yellow, green, sky-blue, blue, white
EKRAN-INFO-RGB-O Multi-color general industrial version fire annunciator	The general industrial version annunciator is designed to be used in explosive environments as a light, acoustic or combined means of notification, information indicator and panel; it provides signals in fire and security alarm systems operating in combination with any receiving and control devices. The annunciator can be used for indication of equipment operation modes and for alerting the personnel in case of emergencies or other situations. It can be used as an all-purpose illuminated information panel with capability of remote control. The annunciator provides multi-colored imaging (7 colors) - red, pink, yellow, green, sky-blue, blue, white
EKRAN-INFO-RGB-TECHNO Multi-color explosion-proof fire annunciator for displaying technical data in PCS	It is designed for displaying technical data in PCS. It can both request data from an external device acting as the master in the Modbus line and be a slave device receiving data from the PCS. It can be used as an all-purpose illuminated information panel with capability of remote control. The annunciator provides multi-colored imaging (7 colors) - red, pink, yellow, green, sky-blue, blue, white

TECHNICAL DATA:

Modification	EKRAN-INFO Single-color explosion-proof fire annunciator	EKRAN-INFO-O Single-color general industrial version fire annunciator	EKRAN-INFO-RGB Multi-color explosion-proof fire annunciator
			
Enclosure explosion proofness marking	1Ex d mb [ib] IIC T4 Gb X		1Ex d mb [ib] IIC T4 Gb X
Ingress protection rating	IP66	IP66	IP66
Operating temperature range, °C	-60...75	-60...75	-60...75
Supply voltage, V	24 VDC / 230 VAC	24 VDC / 230 VAC	24 VDC / 230 VAC
Maximum current consumption, mA	Depends on the size of the image being displayed (% of the whole field) 0%/50%/100%: 12 VDC - 170/400/690 24 VDC - 120/260/360 230 VAC - 30/70/100	Depends on the size of the image being displayed (% of the whole field) 0%/50%/100%: 12 VDC - 170/400/690 24 VDC - 120/260/360 230 VAC - 30/70/100	Depends on the size of the image being displayed and the colors used (% of the whole field) from-to: 12 VDC - 20-75 24 VDC - 12-4 230 VAC - 0.35-0.85
Level of acoustic pressure, min., dB	100	100	100
Acoustic signal type	Siren	Siren	Siren
Available acoustic modes	Constant or intermittent	Constant or intermittent	Constant or intermittent
Frequency range of generated acoustic signals, kHz	1,0...4,5	1,0...4,5	1,0...4,5
Light source	LEDs	LEDs	LEDs
Light channel flashing frequency, Hz	0,5...5,0	0,5...5,0	0,5...5,0
Available glow modes	Static text/ Flashing/ Scrolling text/ Slide-show		
Available glow colors	Single color:	Single color:	Multi-color:
Display field of the annunciator, pixels	56*16	56*16	56*16
Text input features	Text, icons or images	Text, icons or images	Text, icons or images
Allowed number of messages (scenarios)	Up to 4 scenarios	Up to 4 scenarios	Up to 512 scenarios (storage in nonvolatile memory of the annunciator)
Message programming method	By the user via the USB port	By the user via the USB port	By the user via the USB port
Possibility of remote control of the annunciator	Yes, by means of the UUO - annunciator control device - via RS-485 communication channel		
Maximum duration of continuous operation of the annunciator in acoustic signal generation mode, hours	3,0	3,0	3,0
Possibility of connection to addressable loop	Yes (by means of setting the address marks)	Yes (by means of setting the address marks)	Yes (in case of transferring of signal via communication channel RS-485 with Modbus RTU protocol) Maximum number of addressable devices to be connected: 32
Supported protocol			Modbus RTU
Max. overall dimensions, mm - body (with visor and cable gland)	453*226*155	453*226*155	453*226*155
- information field	422*122	422*122	422*122
Enclosure material	Powder-coated steel / Bright annealed stainless steel 12X18H10T		
Number of cable glands in the annunciator body	1	1	1
Cable entry diameter, mm	6...12 (into equipment enclosure), up to 22 (along the external insulation)		
Installation of the annunciator at site	Bracket (included in the supply package)	Bracket (included in the supply package)	Bracket (included in the supply package)
Available packages	Input devices, USB RS-485 (PI1, PI2) converter, UUO annunciator controller		
Max. weight, kg	8,9	8,9	8,9
Lifetime, min., years	10	10	10
Warranty period, years	5	5	5

NEW

TECHNICAL DATA:

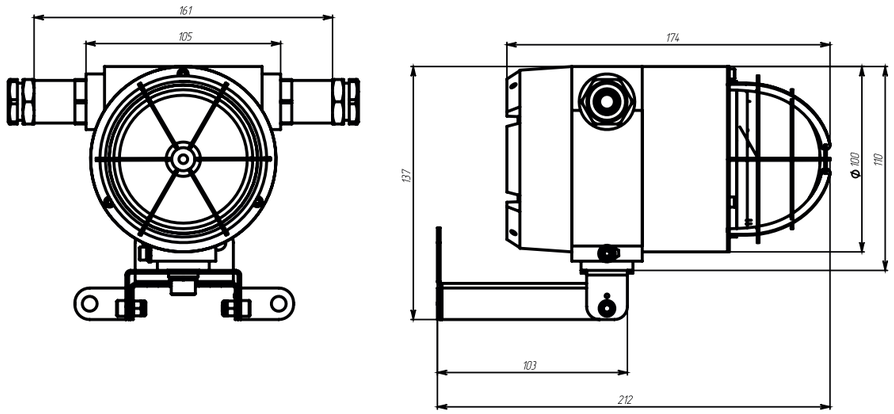
EKRAN-INFO-RGB-a Multi-color explosion-proof addressable fire annunciator	EKRAN-INFO-RGB-O Multi-color general industrial version fire annunciator	EKRAN-INFO-RGB-TECHNO Multi-color explosion-proof fire annunciator for displaying technical data in PCS NEW
		
1Ex d mb [ib] IIC T4 Gb X		1Ex d mb [ib] IIC T4 Gb X
IP66	IP66	IP66
-60...75	-60...75	-60...75
From addressable loop - 15...39 (remains operational at 8...28) From external power supply source - 24 VDC	24 VDC / 230 VAC	24 VDC / 230 VAC
From addressable loop - 2.0. From external power supply source: depends on the size of the image being displayed and the colors used (% of the whole field) from-to: 12 VDC - 20-75 24 VDC - 12-4	Depends on the size of the image being displayed (% of the whole field) 12 VDC - 20-75 24 VDC - 12-4 230 VAC - 0.35-0.85	Depends on the size of the image being displayed and the colors used (% of the whole field) from-to: 12 VDC - 20-75 24 VDC - 12-4 230 VAC - 0.35-0.85
100	100	100
Siren	Siren	Siren
Constant or intermittent	Constant or intermittent	Constant or intermittent
1,0...4,5	1,0...4,5	1,0...4,5
LEDs	LEDs	LEDs
0,5...5,0	0,5...5,0	0,5...5,0
Static text/ Flashing/ Scrolling text/ Slide-show		
Multi-color:	Multi-color:	Multi-color:
56*16	56*16	56*16
Text, icons or images	Text, icons or images	Text, icons or images
Up to 10 scenarios	Up to 512 scenarios (storage in nonvolatile memory of the annunciator)	Up to 2 values, in each value up to 7 zones. Each zone can be assigned its own test, color and acoustic settings
By the user via the USB port	By the user via the USB port	Configuration via the USB port with displaying the current values in text, numeric and/or graphical form with possibility to change the color from the attached sensor
Yes, by means of the UUO - annunciator control device - via RS-485 communication channel		
3,0	3,0	3,0
Yes (via the Dozor-07a protocol) Maximum number of addressable devices to be connected: 120	Yes (in case of transferring of signal via communication channel RS-485 with Modbus RTU protocol) Maximum number of addressable devices to be connected: 32	Yes (in case of transferring of signal via communication channel RS-485 with Modbus RTU protocol) Maximum number of addressable devices to be connected: 32
Dozor-07a	Modbus RTU	Modbus RTU
453*226*155	453*226*155	453*226*155
422*122	422*122	422*122
Powder-coated steel / Bright annealed stainless steel 12X18H10T		
1	1	1
6...12 (into equipment enclosure), up to 22 (along the external insulation)		
Bracket (included in the supply package)	Bracket (included in the supply package)	Bracket (included in the supply package)
Input devices, USB↔RS-485 (PI1, PI2) converter, UUO annunciator controller		
8,9	8,9	8,9
10	10	10
5	5	5

VS-07e-Ex-S

Light Fire Annunciators

The light fire annunciator VS-07e-Ex-S is designed for generation of alarm light signals in fire and security alarm systems, in joint operation with any fire alarm control units. The annunciator can be used for indication of equipment operation modes and for alerting the personnel in case of emergencies or other situations. It is used at chemical, oil and gas production, oil and gas processing industry enterprises and in explosive areas of other production facilities.

DIMENSIONS



1Ex db IIC T6...T5 Gb X | IP67/ IP68 | -60°+70°C | 12-24 V | 230 V | 5 J | 10 modes | 10 000 lx | 5 years

TECHNICAL DATA:

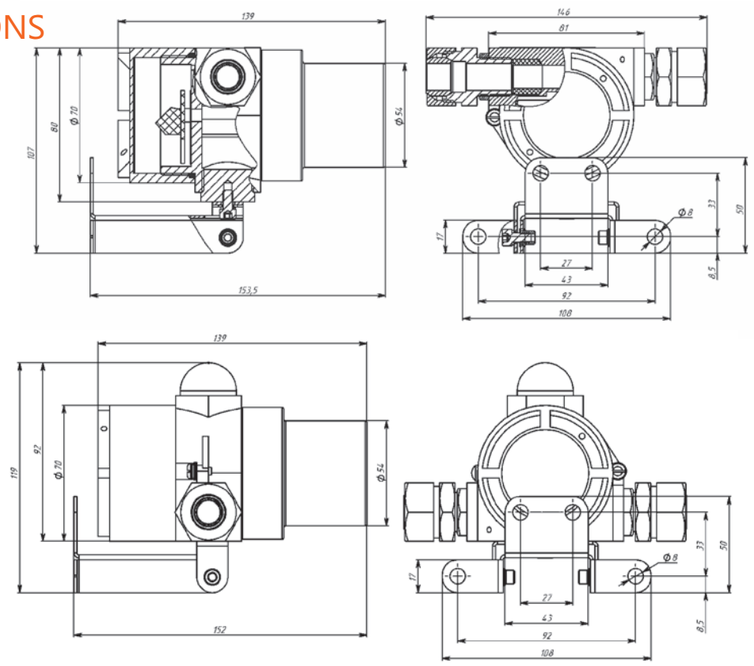
Modification	VS-07e-Ex-SD Light explosion-proof fire annunciator with LED lamp	VS-07e-Ex-SL Light explosion-proof fire annunciator with flash photoilluminating lamp (strobe light)	VS-07e-O-SD Light general industrial purpose fire annunciator with LED lamp	VS-07e-O-SL Light general industrial purpose fire annunciator with flash photoilluminating lamp (strobe light)
				
Enclosure explosion proofness marking	1Ex db IIC T6...T5 Gb X Ex tb IIIC T80°C...T100°C Gb X	1Ex db IIC T6...T5 Gb X Ex tb IIIC T80°C...T100°C Gb X		
Ingress protection rating	IP67/ IP68	IP67/ IP68	IP67/ IP68	IP67/ IP68
Operating temperature range, °C	-60...70	-60...70	-60...70	-60...70
Supply voltage, V	24 VDC / 230 VAC	24 VDC / 230 VAC	24 VDC / 230 VAC	24 VDC / 230 VAC
Maximum current consumption, mA	12 VDC - 320 24 VDC - 220 230 VAC - 40	12 VDC - 650 24 VDC - 320 230 VAC - 70	12 VDC - 320 24 VDC - 220 230 VAC - 40	12 VDC - 650 24 VDC - 320 230 VAC - 70
Power consumption, max., W at: 24 VDC / 230 VAC	24 VDC – 5,1 230 VAC – 9,2	24 VDC - 10,0 230 VAC - 15,5	24 VDC – 5,1 230 VAC – 9,2	24 VDC - 10,0 230 VAC - 15,5
Light source	LED lamp	Pulse photoilluminating lamp (strobe light)	LED lamp	Pulse photoilluminating lamp (strobe light)
Available glow modes	10 operation modes (fitted with DIP-switch): Constant glow/ Flashing/ Flare	Strobe light (flare pulse energy: 5 J)	10 operation modes (fitted with DIP-switch): Constant glow/ Flashing/ Flare	Strobe light (flare pulse energy: 5 J)
The light signal is clearly distinguishable at the 360-deg visibility, at a distance of 15 meters and at the minimum external illuminance level, lx	10 000	10 000	10 000	10 000
Available glow colors:				
Brightness of the alarm light signal, min., cd	86	153	86	153
Maximum duration of continuous operation of the annunciator in light signal generation mode, hours	3,0	3,0	3,0	3,0
Possibility of connection to addressable loop	Yes (by means of setting the address marks)	Yes (by means of setting the address marks)	Yes (by means of setting the address marks)	Yes (by means of setting the address marks)
Max. overall dimensions (without cable glands and bracket), mm	113*165*175	113*165*175	113*165*175	113*165*175
Enclosure material	Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ
Number of cable glands in the annunciator body	2	2	2	2
Max. cable entry diameter, mm	6...12 (into the equipment enclosure) up to 22 (along the external insulation)			
Installation of the annunciator at site	Bracket (included in the supply package) long bracket (optional)			
Available packages	Input devices, long bracket (optional)	Input devices, long bracket (optional)	Input devices, long bracket (optional)	Input devices, long bracket (optional)
Max. weight, kg	1,5	1,5	1,5	1,5
Lifetime, min., years	10	10	10	10
Warranty period, years	5	5	5	5

VS-07e-Ex-Z (ZI)

Acoustic Fire Annunciators

Acoustic fire annunciator VS-07e-Ex-Z (ZI) is designed for generation of acoustic and light signals in fire and security alarm systems, in joint operation with any fire alarm control units. The annunciator can be used for indication of equipment operation modes and for alerting the personnel in case of emergencies or other situations. It is used at chemical, oil and gas production, oil and gas processing industry enterprises and in explosive areas of other production facilities.

DIMENSIONS



1Ex db IIC T6 Gb X | IP66 | -60°+70°C | 12-24 V | 230 V | 100 dB | 3 hours | 5 years

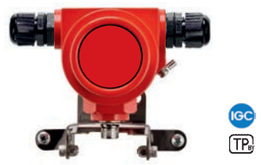
MODIFICATIONS:

VS-07e-Ex-Z Explosion-proof acoustic fire annunciator (siren)	The annunciator is designed for generation in explosive areas of alarm acoustic signals in fire and security alarm systems, in joint operation with any fire alarm control units. It can be used for indication of equipment operation modes and for alerting the personnel in case of emergencies or other situations.
VS-07e-Ex-ZI Explosion-proof acoustic fire annunciator with indication	The annunciator is designed for generation in explosive areas of alarm acoustic, light or combined signals in fire and security alarm systems, in joint operation with any fire alarm control units. It can be used for indication of equipment operation modes and for alerting the personnel in case of emergencies or other situations.
VS-07e-a-Ex-Z Explosion-proof acoustic addressable fire annunciator (siren)	The annunciator is designed for generation in explosive areas of alarm acoustic signals in fire and security alarm systems, for application only as part of addressable loop of instruments supporting the Dozor-07a protocol. It can be used for indication of equipment operation modes and for alerting the personnel in case of emergencies or other situations.
VS-07e-a-Ex-ZI Explosion-proof acoustic addressable fire annunciator with indication	The annunciator is designed for generation in explosive areas of alarm acoustic, light or combined signals in fire and security alarm systems, for application only as part of addressable loop of instruments supporting the Dozor-07a protocol. It can be used for indication of equipment operation modes and for alerting the personnel in case of emergencies or other situations.
VS-07e-O-Z Fire annunciator in general-purpose industrial version (siren)	The annunciator in general-purpose industrial version is designed for generation of alarm acoustic signals in fire and security alarm systems, in joint operation with any fire alarm control units. It can be used for indication of equipment operation modes and for alerting the personnel in case of emergencies or other situations.
VS-07e-O-ZI Fire annunciator in general-purpose industrial version (siren)	The annunciator in general-purpose industrial version is designed for generation of alarm acoustic, light or combined signals in fire and security alarm systems, in joint operation with any fire alarm control units. It can be used for indication of equipment operation modes and for alerting the personnel in case of emergencies or other situations.
VS-07e-a-O-Z Addressable fire annunciator in general-purpose industrial version (siren)	The annunciator in general-purpose industrial version is designed for generation of alarm acoustic signals in fire and security alarm systems, for application only as part of addressable loop of instruments supporting the Dozor-07a protocol. It can be used for indication of equipment operation modes and for alerting the personnel in case of emergencies or other situations.
VS-07e-a-O-ZI Addressable fire annunciator in general-purpose industrial version with indication	The annunciator in general-purpose industrial version is designed for generation of alarm acoustic, light or combined signals in fire and security alarm systems, for application only as part of addressable loop of instruments supporting the Dozor-07a protocol. It can be used for indication of equipment operation modes and for alerting the personnel in case of emergencies or other situations.

TECHNICAL DATA:

Modification	VS-07e-Ex-Z Explosion-proof acoustic fire annunciator (siren)	VS-07e-Ex-ZI Explosion-proof acoustic fire annunciator with indication	VS-07e-a-Ex-Z Explosion-proof acoustic addressable fire annunciator (siren)
			
Enclosure explosion proofness marking	1Ex db IIC T6 Gb X Ex tb IIIC T80°C Db X	1Ex db IIC T6 Gb X Ex tb IIIC T80°C Db X	1Ex db IIC T6 Gb X Ex tb IIIC T80°C Db X
Ingress protection rating	IP66	IP66	IP66
Operating temperature range, °C	-60...70	-60...70	-60...70
Supply voltage, V	24 VDC / 230 VAC	24 VDC / 230 VAC	From addressable loop - 15...39 (remains operational at 8...28) From external power supply source - 24
Maximum current consumption, mA	12 VDC – 35 24 VDC – 70 230 VAC – 10	12 VDC – 90 24 VDC – 120 230 VAC – 15	12 VDC – 35 24 VDC – 70
Level of acoustic pressure, min., dB	100	100	100
Acoustic signal type	Siren	Siren	Siren
Available acoustic modes	Tone 1 / Tone 2	Tone 1 / Tone 2	Tone 1 / Tone 2
Frequency range of generated acoustic signals, kHz	1,0...4,5	1,0...4,5	1,0...4,5
Light source		LED lamp	
Light function flashing frequency, Hz		0,5...2,0	
Available glow modes		Flashing	
Available glow colors: Standby mode / Emergency mode		🔴🟡🟢🔵 / 🔴🟡	
The light signal is clearly distinguishable at the 360-deg visibility, at a distance of 15 meters and at the minimum external illuminance level, lx		10 000	
Maximum duration of continuous operation of the annunciator in acoustic signal generation mode, hours	3,0	3,0	3,0
Possibility of connection to addressable loop	Yes (by means of setting the address marks)	Yes (by means of setting the address marks)	Yes (via the Dozor-07a protocol) Maximum number of addressable devices to be connected: 255
Supported protocol			Dozor-07a
Max. overall dimensions (without cable glands and bracket), mm	85*85*140	95*85*135	85*85*140
Enclosure material	Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ
Number of cable glands in the annunciator body	2	2	2
Max. cable entry diameter, mm	6...12 (into the equipment enclosure) up to 22 (along the external insulation)		
Annunciator installation mode	Bracket (included in the supply package), long bracket (optional)		
Available packages	Input devices, long bracket (optional)	Input devices, long bracket (optional)	Input devices, long bracket (optional)
Max. weight, kg	1,5	1,5	1,5
Lifetime, min., years	10	10	10
Warranty period, years	5	5	5

TECHNICAL DATA:

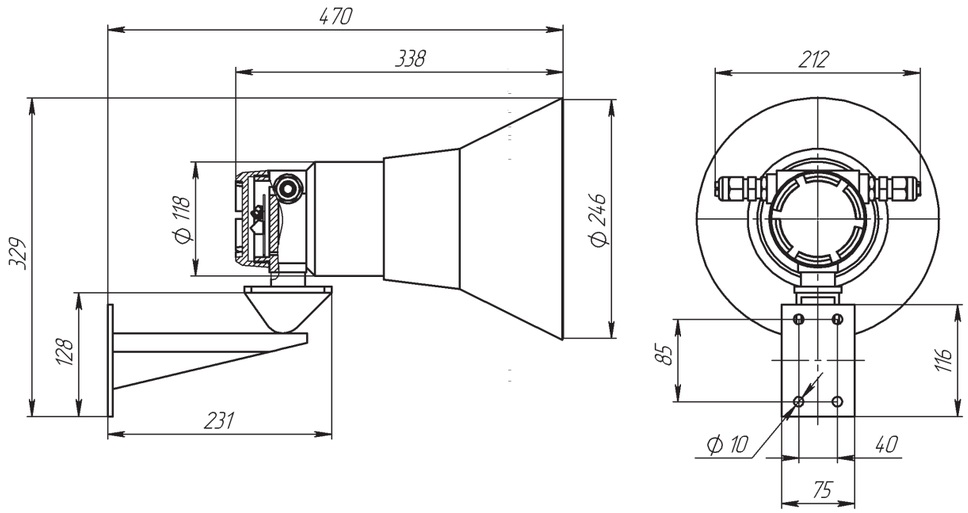
VS-07e-a-Ex-ZI Explosion-proof acoustic addressable fire annunciator with indication	VS-07e-O-Z Fire annunciator in general-purpose industrial version (siren)	VS-07e-O-ZI Fire annunciator in general-purpose industrial version with indication
		
1Ex db IIC T6 Gb X Ex tb IIIC T80°C Db X		
IP66	IP66	IP66
-60...70	-60...70	-60...70
From addressable loop - 15...39 (remains operational at 8...28) From external power supply source - 24 VDC	24 VDC / 230 VAC	24 VDC / 230 VAC
12 VDC – 90 24 VDC – 120	12 VDC – 35 24 VDC – 70 230 VAC – 10	12 VDC – 90 24 VDC – 120 230 VAC – 15
100	100	100
Siren	Siren	Siren
Tone 1 / Tone 2	Tone 1 / Tone 2	Tone 1 / Tone 2
1,0...4,5	1,0...4,5	1,0...4,5
LED lamp		LED lamp
0,5...2,0		0,5...2,0
Flashing		Flashing
🔴🟡🟢🔵 / 🔴🟡		🔴🟡🟢🔵 / 🔴🟡
10 000		10 000
3,0	3,0	3,0
Yes (via the Dozor-07a protocol) Maximum number of addressable devices to be connected: 255	Yes (by means of setting the address marks)	Yes (by means of setting the address marks)
Dozor-07a		
95*85*135	85*85*140	95*85*135
Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ
2	2	2
6...12 (into the equipment enclosure) up to 22 (along the external insulation)		
Bracket (included in the supply package), long bracket (optional)		
Input devices, long bracket (optional)	Input devices, long bracket (optional)	Input devices, long bracket (optional)
1,5	1,5	1,5
10	10	10
5	5	5

GRV-07e

Explosion-Proof Horn Loudspeakers

Explosion-proof horn loudspeakers GRV-07e are designed for use as a sound source in fire and security alarm systems, industrial and technological loud-speaking communication and other kinds of annunciation and acoustic warning operating jointly with alarm control units and amplifiers. In fire alarm systems, loudspeakers are used as explosion-proof voice alarm devices providing broadcasting of fire alert and evacuations instructions. They are used at chemical, oil and gas production, oil and gas processing industry enterprises and in explosion hazardous areas of other production facilities.

DIMENSIONS (GRV-07E-20)

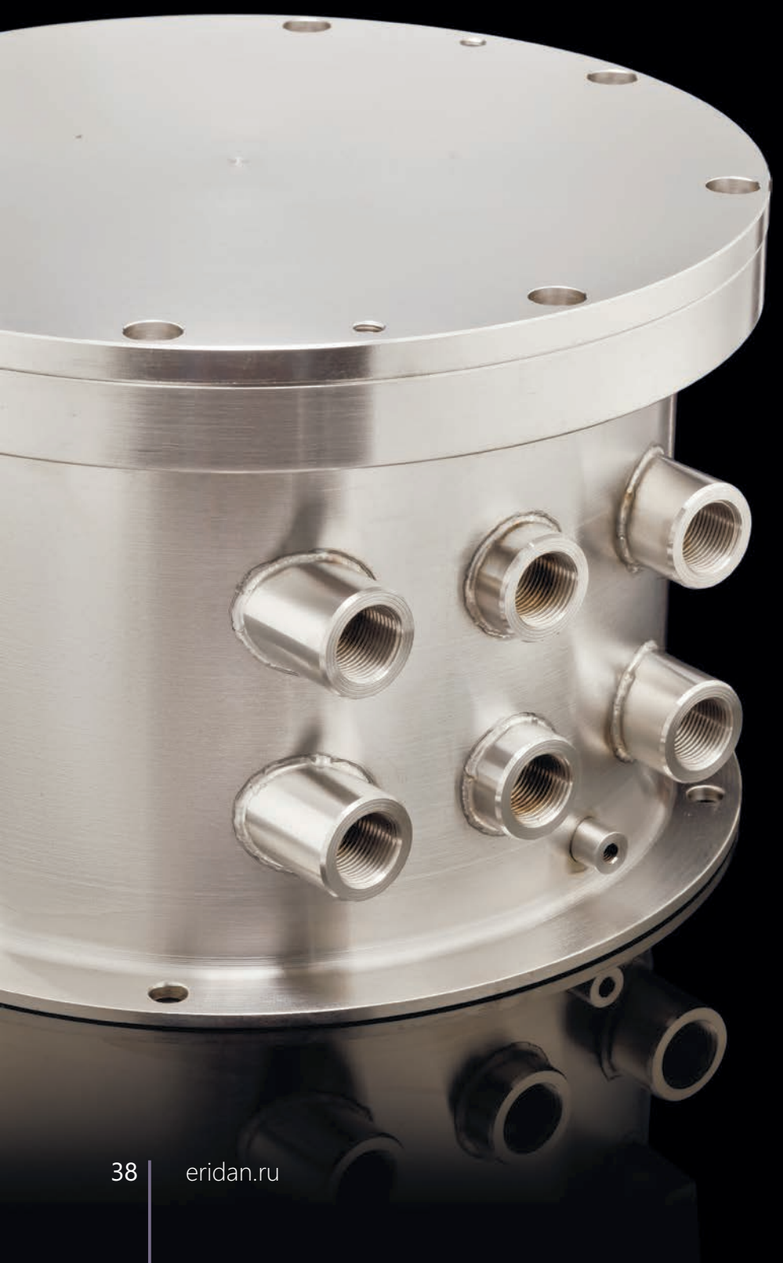


1Ex d IIC T6 X | IP66 | -60°+55°C | до 126 dB | 20W | 30W | 30/25/12,5/6/4/2/1W | 50W | Aluminum | 5 years

TECHNICAL DATA:

Modification	GRV-07e-20 Explosion-proof horn loudspeaker 20 W	GRV-07e-30 Explosion-proof horn loudspeaker 30 W	GRV-07e-30-PM Explosion-proof horn loudspeaker 30 W with power selection	GRV-07e-50 Explosion-proof horn loudspeaker 50 W
				
Enclosure explosion proofness marking	1Ex d IIC T6 X	1Ex d IIC T6 X	1Ex d IIC T6 X	1Ex d IIC T6 X
Ingress protection rating	IP66	IP66	IP66	IP66
Operating temperature range, °C	-60...55	-60...55	-60...55	-60...55
Rated capacity PMAX, W	20	30	30	50
Rated voltage, V	100	100	100	100
Switch mode connection: - impedance, Ohm - power, W	0,5/1 20/10	0,33/0,66 30/15	0,33/0,4/0,8/1,67/2,5/5/10 30/25/12,5/6/4/2/1	0,2/0,4 50/25
Low resistant connection: - impedance, Ohm - power, W	8 20	8 30		8 50
Effective operating frequency band, Hz	380-6500	380-6500	380-6500	380-6500
Maximum sound pressure level (P max, 1 m) min., dB	119	122	122	126
Maximum duration of continuous operation in acoustic (voice) signal generation mode, hours	1,0	1,0	1,0	1,0
Max. overall dimensions (without bracket), mm	Ø250*330	Ø280*380	Ø280*380	Ø320*400
Enclosure material	Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ
Number of cable glands in the annunciator body	2	2	2	2
Max. cable entry diameter, mm	6...12 (into the equipment enclosure) up to 22 (along the external insulation)			
Installation of the annunciator at site	Bracket (included in the supply package) fastening adapter for post/angular mounting (optional)			
Available packages	Input devices, fastening adapter for post/angular mounting (optional)	Input devices, fastening adapter for post/angular mounting (optional)	Input devices, fastening adapter for post/angular mounting (optional)	Input devices, fastening adapter for post/angular mounting (optional)
Max. weight, kg	4,5	4,9	4,9	5,3
Lifetime, min., years	10	10	10	10
Warranty period, years	5	5	5	5

SWITCH BOXES



Switch boxes are electric devices used for allocation of cables and their connections, tails, routing, etc. in- and outdoors when setting-up electrical networks.

They may be installed in open spaces and enclosed areas of different buildings and structures, as well as on river and sea-going vessels and production facilities, where explosive mixtures of air and combustible gases or vapors may be present.

The switch boxes may be used at chemical, oil and gas production, oil and gas processing and other plants with explosion hazardous areas.

KKV-07e

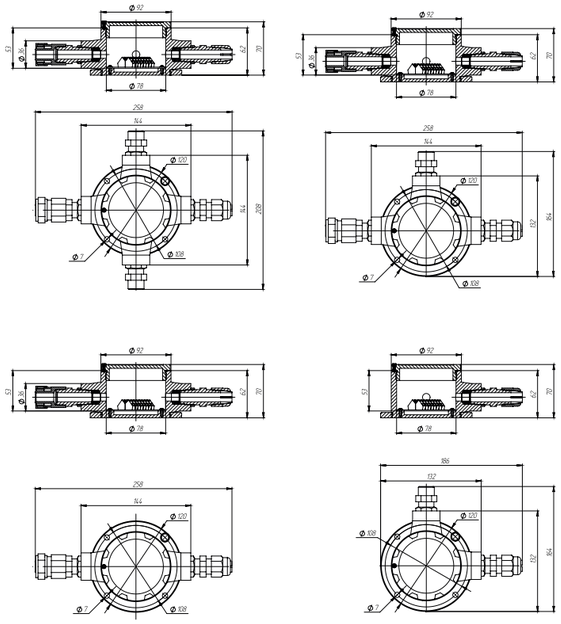
Switch boxes

The KKV-07e switch boxes are designed for connection and branching of general and special purpose electrical circuits (control and power cables of automatic and telemechanics systems, control, security and alarm circuits, etc.) in explosive areas.
They are used at chemical, oil and gas production, oil and gas processing industry enterprises and in explosive areas of other production facilities.

MODIFICATIONS:

KKV-07e-Ex-A-R1-U/P/T/K
Explosion-proof aluminum switch box,
frame size R1
P - pass-through
U - angular
T - three-way
K - cross-shaped

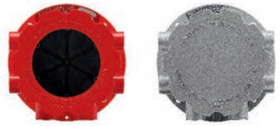
KKV-07e-O(-A)-U/P/T/K
General industrial version
aluminum switch box,
frame size R1 - 268 m³

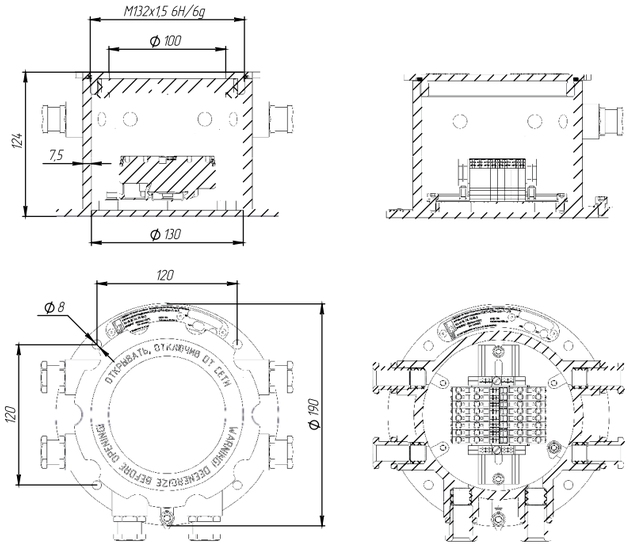


1Ex db IIC T6...T4 Gb X	IP66/ IP67	-60°+100°C	12-24, 230 V	268 sm³... ...6952 sm³	Aluminum	Steel	Stainless steel	2...12 cable glands in the box body	Sight glass

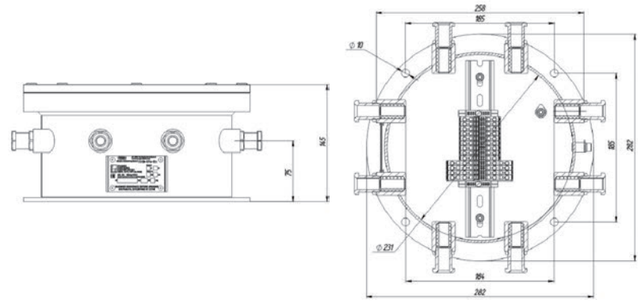
MODIFICATIONS:

KKV-07e-Ex-A-R2
Explosion-proof aluminum
switch box, frame
size R2 - 1475 m³

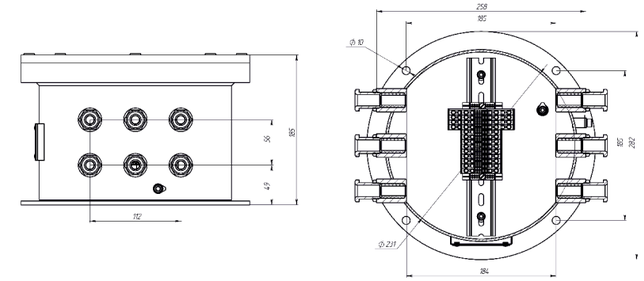




KKV-07e-Ex-S/N-R3
Explosion-proof switch box
in a steel/ stainless steel body
with a window/ without window
with heating option,
frame size R3 - 5275 m³



KKV-07e-Ex-S/N(-SO)-R4
Explosion-proof switch box
in a steel/ stainless steel body
with a window/ without window
with heating option,
frame size R4 - 6952 m³

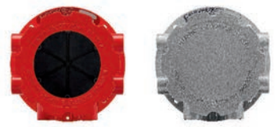


TECHNICAL DATA:

Modification	KKV-07e-Ex-A-R1-U/P/T/K Explosion-proof aluminum switch box, frame size R1	KKKV-07e-O(-A)-U/P/T/K General industrial version aluminum switch box, frame size R1
		
Enclosure explosion proofness marking	Ex tb IIIC T80°C...T100°C Db X 1Ex db IIC T6...T4 Gb X	
Ingress protection rating	IP66/ IP67	IP66/ IP67
Operating temperature range, °C	-60...100	-60...100
Supply voltage, V	400	400
Max. switching current, A	32	32
Availability of sight glass in the cover		
Interior space heating system		
Possibility of connection to addressable loop	Yes (by means of connecting the address marks)	Yes (by means of connecting the address marks)
Max. overall dimensions, mm: - body (without cable gland)	P – 150*120*70 U – 130*130*70 T – 150*130*70 K - 150*150*70	P - 150*120*70 U - 130*130*70 T - 150*130*70 K - 150*150*70
- internal size	78*60	78*60
- effective internal volume, cm^3	268	268
Number of terminals: - terminals, max.	5	5
- number of wires in a terminal	P/U – 2, T – 3, K - 5	P/U – 2, T – 3, K - 5
Enclosure material	Aluminum alloy AK 12 ПЧ	Aluminum alloy AK 12 ПЧ
Number of cable glands in the box body	2-4	2-4
Cable entry diameter, mm	6...12 (into equipment casing) up to 22 (along the external insulation)	6...12 (into equipment casing) up to 22 (along the external insulation)
Box installation mode	By means of mounting holes to the surface	By means of mounting holes to the surface
Available packages	Input devices	Input devices
Max. weight, kg	1,0	2,0
Lifetime, min., years	10	10
Warranty period, years	5	5

NEW

TECHNICAL DATA:

KKV-07e-Ex-A-R2 Explosion-proof aluminum switch box, frame size R2	KKB-07e-Ex-S/N-R3 Explosion-proof switch box in a steel/ stainless steel body with a window/ without window with heating option, frame size R3	KKV-07e-Ex-S/N(-SO)-R4 Explosion-proof switch box in a steel/ stainless steel body with a window/ without window with heating option, frame size R4
NEW 	NEW 	NEW 
Ex tb IIIC T80°C...T100°C Db X 1Ex db IIC T6...T4 Gb X	Ex tb IIIC T80°C...T100°C Db X PB Ex db I Mb X 1Ex db IIC T6...T4 Gb X 1Ex db e IIC T6...T4 Gb X	Ex tb IIIC T80°C...T100°C Db X PB Ex db I Mb X 1Ex db IIC T6...T4 Gb X 1Ex db e IIC T6...T4 Gb X
IP66/ IP67	IP66/ IP67	IP66/ IP67
-60...100	-60...100	-60...100
600	600	600
32	32	32
Yes (optional)	Yes (optional)	Yes (optional)
	Yes (optional) Heating system parameters: 24 VDC / 230 VAC 40 / 60 W	Yes (optional) Heating system parameters: 24 VDC / 230 VAC 40 / 60 W
Yes (by means of setting the address marks)	Yes (by means of setting the address marks)	Yes (by means of setting the address marks)
190*190*125	285*285*140	285*285*190
130*105 (*88 with the window)	230*130 (*110 with the window)	230*170 (*150 with the window)
1475	5275	6952
8	12	18
4	4	4
Aluminum alloy AK 12 ПЧ	Powder-coated plated steel/ Stainless steel 12X18H10T	Powder-coated plated steel / Stainless steel 12X18H10T
6	8	12
6...12 (into equipment casing) up to 22 (along the external insulation)	6...12 (into equipment casing) up to 22 (along the external insulation)	6...12 (into equipment casing) up to 22 (along the external insulation)
By means of mounting holes to the surface	By means of mounting holes to the surface	By means of mounting holes to the surface
Input devices	Input devices, sight window in the cover, heating system, visor, post mounting adapter	Input devices, sight window in the cover, heating system, visor, post mounting adapter
2,1	14,9	19,0
10	10	10
5	5	5

VIDEO SURVEILLANCE

In case of production facilities, video surveillance means, in the first place, ensuring protection, security and control of automated processes. Eridan JSC develops and manufactures components for video surveillance systems, which among other things prevent ignition or detonation of the environment surrounding the video camera which may result from a failure in the electric networks of the camera.

They may be installed in open spaces and enclosed areas of different buildings and structures, as well as on river and sea-going vessels and production facilities, where explosive mixtures of combustible gases or vapors may be present.

They may be used at chemical, oil and gas production, oil and gas processing and other plants with explosion hazardous areas.

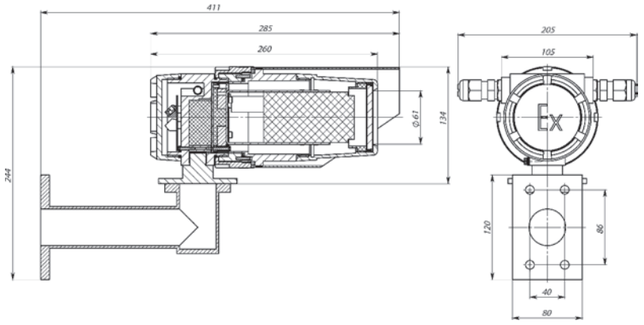
TVK-07

Thermohousings

The TVK-07 thermohousings are designed for operation as part of video surveillance security, safety and technological process control systems with simultaneous prevention of ignition or detonation of the media surrounding the camera due to faults in the camera's electric circuits.
They can be used in underground (mining) development and extraction of coal, mineral salts and other mineral deposits.
They are used at chemical, oil and gas production, oil and gas processing industry enterprises and in explosive areas of other production facilities.

MODIFICATIONS:

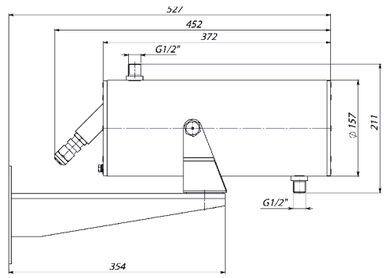
TVK-07-A
Explosion-proof thermohousing
in an aluminum alloy body

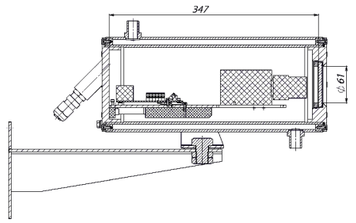


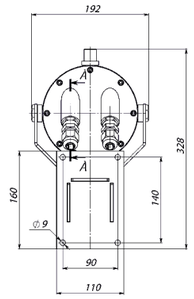
1Ex db IIC T6 Gb X	PB Ex db I Mb X	IP66/ IP67	-70°+50°C		Aluminum	Steel	Stainless steel	

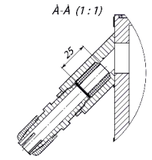
MODIFICATIONS:

TVK-07-V
Explosion-proof thermohousing
with cooling capacity
in a stainless steel body

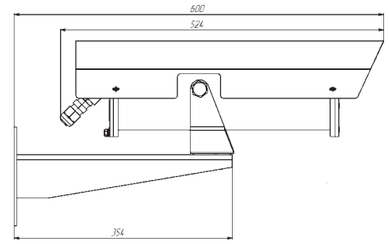


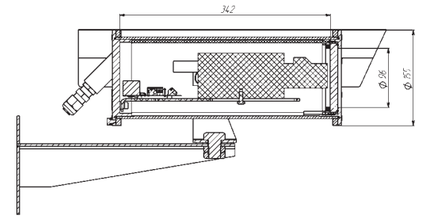


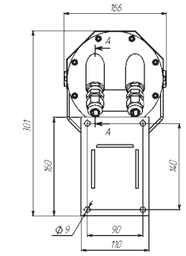


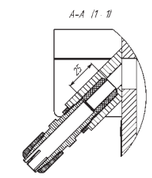


TVK-07-N/S
Explosion-proof thermohousing
in a stainless steel/
low carbon steel body

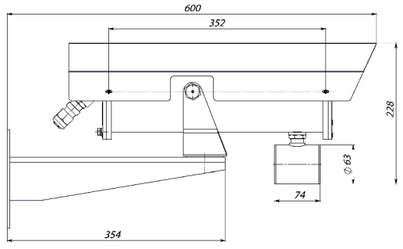


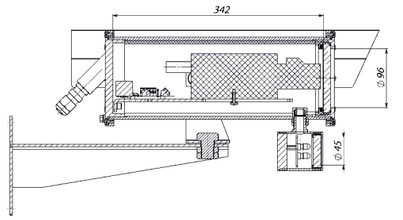


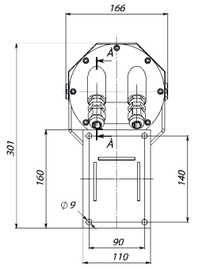


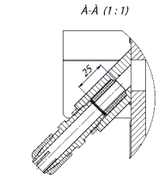


TVK-S/N with IR lighting
Explosion-proof thermohousing
in a stainless steel/
low carbon steel body with IR lighting





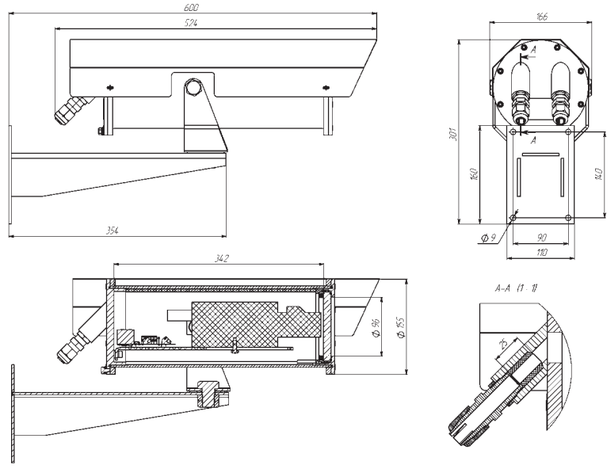




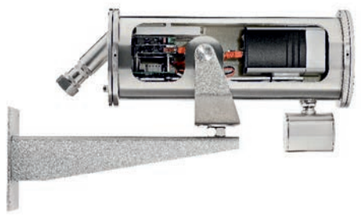
MODIFICATIONS:

TVK-07-N/S-ARKTIKA
Explosion-proof thermohousing
in a stainless steel/
low carbon steel body
for extremely low temperatures

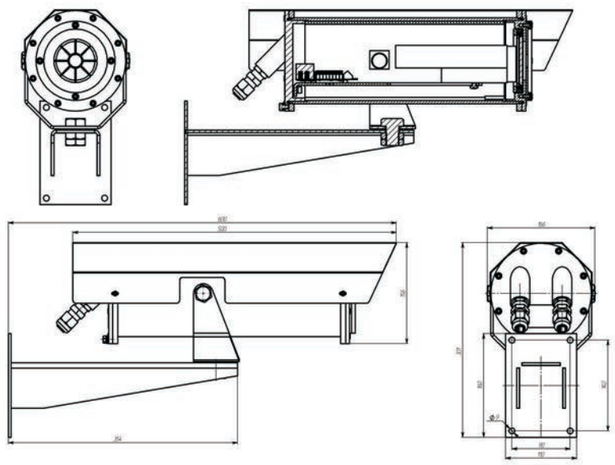
TVK-07-S/N-PoE-ARKTIKA
Explosion-proof thermohousing
in a stainless steel/ low carbon steel
body with a thermoregulator,
power supply 4PPoE IEEE 802.3bt,
and integrated lightning protector
for extremely low temperatures



TVK-07-N/S/OPTIC-IS
Explosion-proof thermohousing
in a stainless steel/ low carbon steel
body with integrated equipment
for data transfer via optic cable
of up to 20 km

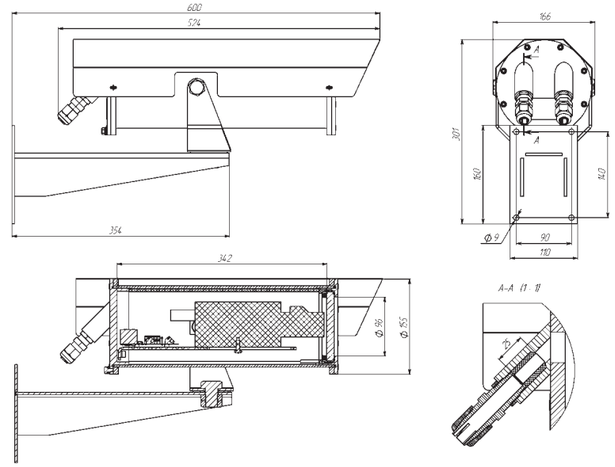


TVK-07-N/S-VIZOR
Explosion-proof thermohousing
in a stainless steel/ low carbon steel body
for installation of thermal imaging cameras



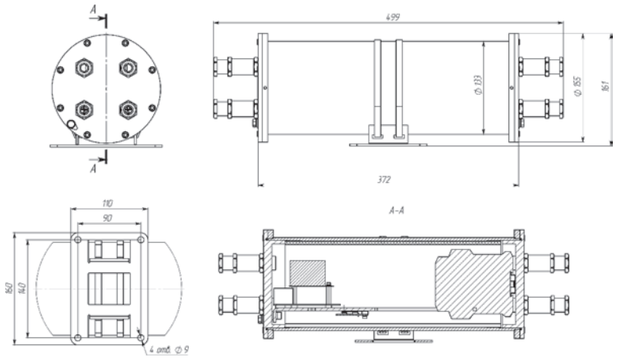
MODIFICATIONS:

TVK-07-O
General purpose industrial version
thermohousing in the following
modifications:
- TVK-07-O-V
- TVK-07-O-N/S
- TVK-07-O-S/N with IR lighting
- TVK-07-O-N/S-ARKTIKA
- TVK-07-O-N/S-OPTIC-IS
- TVK-07-O-N/S-VIZOR

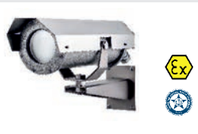


TVK-07-A/N-Mini
Compact explosion-proof thermohousing
in an aluminum alloy/ stainless steel body

TVK-07-N/S-I2
Explosion-proof thermohousing
in a stainless steel/ low carbon steel body
without sight glass for installation
of video equipment



TECHNICAL DATA:

Modification	TVK-07-A Explosion-proof thermohousing in an aluminum alloy body	TVK-07-V Explosion-proof thermohousing with cooling capacity in a stainless steel body	TVK-07-N/S Explosion-proof thermohousing in a stainless steel/ low carbon steel body
			
Enclosure explosion proofness marking	1Ex db e IIC T6 Gb X 1Ex db IIC T6 Gb X	- TVK-07-V: Ex tb IIIC T130/ T200°C Db X, 1 Ex db IIC T2/T4 Gb X PB Ex db I Mb X - TVK-07-V OPTIC-IS: Ex tb [op is] IIIC T130/ T200°C Db X 1Ex db [op is] IIC T2/T4 Gb X PB Ex db [op is] I Mb X	Ex tb IIIC T80°C Db X 1Ex db IIC T6 Gb X PB Ex db I Mb X
Ingress protection rating	IP66/IP67	IP66/IP67	IP66/IP67
Operating temperature range, °C	Nf1: -60...50 NF4: 1...50	I1: 1...130 I2: 1...200	Nf1: -60...50 NF4: 1...50
Supply voltage, V	24 VDC / 230 VAC There is a voltage converter that provides 12V power feed for video-equipment		
Maximum current consumption, max., A (including video camera current consumption) - NF1 - NF4	- 24 VDC – 2,2, 230 VAC – 0,3 - 24 VDC – 0,5, 230 VAC – 0,05	24 VDC – 1,0, 24 VAC – 0,4, 230 VAC – 0,1	- 24 VDC - 3,3, 24 VAC - 3,3, 230 VAC- 0,4 - 24 VDC - 1,0, 24 VAC - 0,4, 230 VAC - 0,1
Furnishing with a video camera	Yes, installation at the manufacturing factory	Upon request	Upon request
Power consumption of video equipment inside the housing, max., W	5	6	6
Cold start mode	Yes (NF1)		Yes (NF1)
Warming up	Yes, independent warming of the glass and the inner space	Yes, independent warming of the glass and the inner space	Yes, independent warming of the glass and the inner space
Protection from overheating	Yes	Yes	Yes
Cooling		Yes, by means of feeding and removal of water	
IR lighting			
Media converter (possibility to transfer signal via optic fiber)		Yes (optional, OPTIC-IS)	
Sight glass cleaning system		Protective pneumatic lens hood (optional)	-Protective pneumatic lens hood (optional) - Duplex-07e - glass cleaning system (optional)
Overall dimensions (without bracket), max., mm - body - effective internal volume diameter*length)	- 370*210*150 - Ø78*220	- 460*195*215 - Ø123*240	- 525*170*160 - Ø113*240 Upon request, the body length can be of the following frame sizes: R1 - 400; R2 - 300; R3 - 200
Enclosure material	Aluminum alloy AK 12 ПЧ	Stainless steel	Stainless steel/ Powder-coated low-carbon steel
Number of cable glands in the box body	2	2; 2 unions for feeding and removal of cooling water	2
Cable entry diameter, mm	6...12 (into equipment casing) Up to 22 (along the external insulation)	5...12 (into equipment casing) Up to 22 (along the external insulation)	5...12 (into equipment casing) Up to 22 (along the external insulation)
Installation mode	Bracket (included in the supply package), fastening adapters for post/ angular mounting (optional)	Bracket (included in the supply package), fastening adapters for post/ angular mounting (optional)	Bracket (included in the supply package), fastening adapters for post/ angular mounting (optional), safety appliance (optional)
Available packages	Video equipment (optional), visor (optional), input devices, fastening adapters for post/ angular mounting (optional)	Video equipment (optional), protective pneumatic lens hood (optional), wires (optional), input devices, fastening adapters for post/ angular mounting (optional), media converter (optional)	Video equipment (optional), wires (optional), visor (optional), protective pneumatic lens hood (optional), input devices, fastening adapters for post/ angular mounting (optional), safety appliance (optional)
Max. weight, kg	6,0	17,0	12,5
Lifetime, min., years	10	10	10
Warranty period, years	5	5	5

NEW

TECHNICAL DATA:

TVK-07-S/N with IR lighting Explosion-proof thermohousing in a stainless steel/ low carbon steel body with IR lighting	TVK-07-N/S-ARKTIKA Explosion-proof thermohousing in a stainless steel/ low carbon steel body for extremely low temperatures	TVK-07-S/N-RoE-ARKTIKA Explosion-proof thermohousing in a stainless steel/ low carbon steel body with athermoregulator, power supply 4PPoE IEEE 802.3bt, and integrated lightning protector for extremely low temperatures NEW
		
Ex tb IIIC T80°C Db X 1Ex db IIC T6 Gb X PB Ex db I Mb X	1Ex db e IIC T6 Gb X	Ex tb IIIC T80°C Db X 1Ex db IIC T6 Gb X PB Ex db I Mb X
IP66/IP67	IP66/IP67	IP66/IP67
Nf1: -60...50 NF4: 1...50	Nf1: -70...50	Nf1: -70...50
24 VDC / 24 VAC / 230 VAC There is a voltage converter that provides 12V power feed for video-equipment	24 VDC / 24 VAC / 230 VAC There is a voltage converter that provides 12V power feed for video-equipment	IEEE 802.3bt, Type 4; 52...57VDC
- 24 VDC - 3.3, 24 VAC - 3.3, 230 VAC - 0.4 - 24 VDC - 1.0, 24 VAC - 0.4, 230 VAC - 0.1 Including IR lighting current consumption - 0.25	- 24 VDC - 3.3, 24 VAC - 3.3, 230 VAC - 0.4 - 24 VDC - 1.0, 24 VAC - 0.4, 230 VAC - 0.1	1,92
Upon request	Upon request	Upon request
6	6	
Yes (NF1)	Yes (NF1)	Yes (NF1)
Yes, independent warming of the glass and the inner space	Yes, independent warming of the glass and the inner space	Yes, independent warming of the glass and the inner space
Yes	Yes	Yes
Yes: -Automatic ON/OFF under illumination of 18±5 lx -Current consumption 0.25 A -Emission wavelength 850 um -Beam angle 15/30/90/120° Lighting distance 100/80/40/25 m	Yes (optional)	Yes (optional)
- Protective pneumatic lens hood (optional) - Duplex-07e - glass cleaning system (optional)	- Protective pneumatic lens hood (optional) - Duplex-07e - glass cleaning system (optional)	- Protective pneumatic lens hood (optional) - Duplex-07e - glass cleaning system (optional)
- 525*170*230 - Ø113*240 Upon request, the body length can be of the following frame sizes: R1 - 400; R2 - 300; R3 - 200	- 525*170*230/160 (with IR/without IR) - Ø113*240 Upon request, the body length can be of the following frame sizes: R1 - 400; R2 - 300; R3 - 200	- 525*170*230/160 (with IR/without IR) - Ø113*195
Stainless steel/ Powder-coated low-carbon steel	Stainless steel/ Powder-coated low-carbon steel	Stainless steel/ Powder-coated low-carbon steel
2	2	2
5...12 (into equipment casing) Up to 22 (along the external insulation)	5...12 (into equipment casing) Up to 22 (along the external insulation)	5...12 (into equipment casing) Up to 22 (along the external insulation)
Bracket (included in the supply package), fastening adapters for post/ angular mounting (optional), safety appliance (optional)	Bracket (included in the supply package), fastening adapters for post/ angular mounting (optional), safety appliance (optional)	Bracket (included in the supply package), fastening adapters for post/ angular mounting (optional), safety appliance (optional)
Video equipment (optional), wires (optional), visor (optional), protective pneumatic lens hood (optional), input devices, fastening adapters for post/ angular mounting (optional), safety appliance (optional)	Video equipment (optional), wires (optional), visor (optional), protective pneumatic lens hood (optional), input devices, fastening adapters for post/ angular mounting (optional), safety appliance (optional)	Video equipment (optional), wires (optional), visor (optional), protective pneumatic lens hood (optional), input devices, fastening adapters for post/ angular mounting (optional), safety appliance (optional)
12,5	12,5	12,5
10	10	10
5	5	5

NEW

TECHNICAL DATA:

Modification	TVK-07-N/S-OPTIC-IS Explosion-proof thermohousing in a stainless steel/ low carbon steel body with integrated equipment for data transfer via optic cable of up to 20 km NEW	TVK-07-N/S-VIZOR Explosion-proof thermohousing in a stainless steel/ low carbon steel body for installation of thermal imaging cameras
		
Enclosure explosion proofness marking	Ex tb [op is] IIIC T80°C Db X 1Ex db [op is] IIC T6 Gb X 1Ex db e [op is] IIC T6 Gb X PB Ex db [op is] I Mb X	Ex tb IIIC T80°C Db X 1Ex db IIC T6 Gb X PB Ex db I Mb X
Ingress protection rating	IP66/IP67	IP66/IP67
Operating temperature range, °C	Nf1: -60 (-70)...50 NF4: 1...50	Nf1: -60 (-70)...50 NF4: 1...50
Supply voltage, V	24 VDC / 24 VAC / 230 VAC There is a voltage converter that provides 12V power feed for video-equipment	24 VDC / 24 VAC / 230 VAC There is a voltage converter that provides 12V power feed for video-equipment
Maximum current consumption, max., A (including video camera current consumption) - NF1 - NF4	 - 24 VDC – 3,3, 24 VAC – 3,3, 230 VAC – 0,4 - 24 VDC – 1,0, 24 VAC – 0,4, 230 VAC – 0,1	 - 24 VDC – 3,3, 24 VAC – 3,3, 230 VAC – 0,4 - 24 VDC – 1,0, 24 VAC – 0,4, 230 VAC – 0,1
Furnishing with a video camera	Upon request	Upon request
Power consumption of video equipment inside the housing, max., W	6	6
Cold start mode	Yes (NF1)	Yes (NF1)
Warming up	Yes, independent warming of the glass and the inner space	Yes, independent warming of the glass and the inner space
Protection from overheating	Yes	Yes
Cooling		
IR lighting	Yes (optional)	Yes (optional)
Media converter (possibility to transfer signal via optic fiber)	- Yes: signal transmission range up to 20 km, 10.8-13.2 VDC, 0.12A, laser emission power Po-15 mW, operating wavelength 1310/1550 nm, data transfer rate 10/100 Mbit/sec, optic cable type - monofilament single mode 9/125 m	
Sight glass cleaning system	- Protective pneumatic lens hood (optional) - Duplex-07e - glass cleaning system (optional)	- Protective pneumatic lens hood (optional) - Duplex-07e - glass cleaning system (optional)
Overall dimensions (without bracket), max., mm - body - effective internal volume (diameter*length)	- 525*170*230/160 (with IR/without IR) - Ø113*240 Upon request, the body length can be of the following frame sizes: R1 – 400 R2 – 300 R3 – 200	- 525*170*230/160 (with IR/without IR) - Ø113*240 Upon request, the body length can be of the following frame sizes: R1 – 400 R2 – 300 R3 – 200
Enclosure material	Stainless steel / Powder-coated low-carbon steel	Stainless steel / Powder-coated low-carbon steel Sight glass: material Ge (GMO 5-40 Ohm x cm)
Number of cable glands in the box body	2	2
Cable entry diameter, mm	5...12 (into equipment casing) Up to 22 (along the external insulation)	5...12 (into equipment casing) Up to 22 (along the external insulation)
Installation mode	Bracket (included in the supply package), fastening adapters for post/angular mounting (optional), safety appliance (optional)	Bracket (included in the supply package), fastening adapters for post/angular mounting (optional), safety appliance (optional)
Available packages	Video equipment (optional), wires (optional), visor (optional), protective pneumatic lens hood (optional), input devices, fastening adapters for post/ angular mounting (optional), safety appliance (optional)	Video equipment (optional), wires (optional), visor (optional), protective pneumatic lens hood (optional), input devices, fastening adapters for post/angular mounting (optional), safety appliance (optional)
Max. weight, kg	12,5	12,5
Lifetime, min., years	10	10
Warranty period, years	5	5

NEW

TECHNICAL DATA:

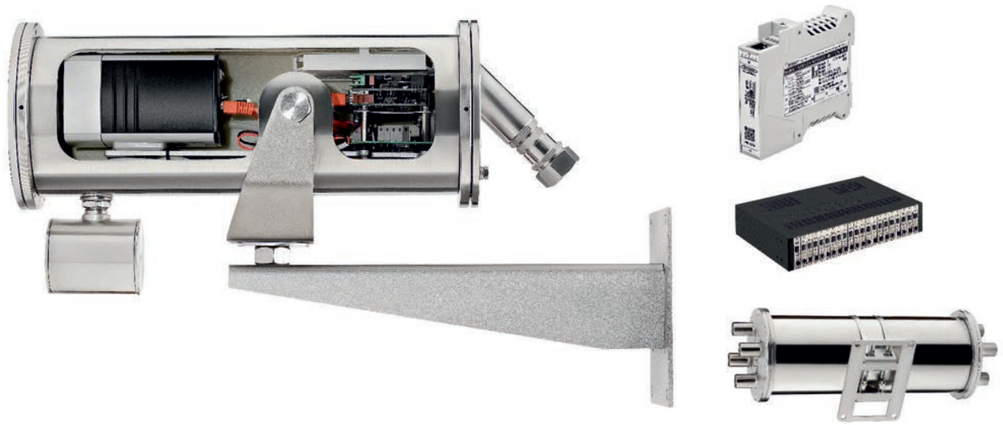
	TVK-07-O General purpose industrial version thermohousing: - TVK-07-O-V - TVK-07-O-N/S - TVK-07-O-S/N with IR lighting -TVK-07-O-N/S-ARKTIKA - TVK-07-O-N/S-OPTIC-IS - TVK-07-O-N/S-VIZOR	TVK-07-A/N-Mini Compact explosion-proof thermohousing in an aluminum alloy/ stainless steel body NEW	TVK-07-N/S-I2 Explosion-proof thermohousing in a stainless steel/ low carbon steel body without sight glass for installation of video equipment
			
		Ex tb IIIC T80°C Db X 1Ex db IIC T6 Gb X PB Ex db I Mb X	1Ex db op pr IIC T6 Gb X 1Ex db e op pr IIC T6 Gb X
	IP66/IP67	IP66/IP67	IP66/IP67
	Nf1: -60 (-70)...50 NF4: 1...50	Nf1: -60...50 NF4: 1...50	Nf1: -60 (-70)...50 NF4: 1...50
	24 VDC / 24 VAC / 230 VAC There is a voltage converter that provides 12V power feed for video-equipment	24 VDC / 24 VAC / 230 VAC / PoE There is a voltage converter that provides 12V power feed for video-equipment	24 VDC / 24 VAC / 230 VAC There is a voltage converter that provides 12V power feed for video-equipment
	- 24 VDC – 3,3, 24 VAC – 3,3, 230 VAC – 0,4 - 24 VDC – 1,0, 24 VAC – 0,4, 230 VAC – 0,1		- 24 VDC – 3,3, 24 VAC – 3,3, 230 VAC – 0,4 - 24 VDC – 1,0, 24 VAC – 0,4, 230 VAC – 0,1
	Upon request	Yes, installation at the manufacturing factory	Upon request
	6	3	6
	Yes (NF1)	Yes (NF1)	Yes (NF1)
	Yes, independent warming of the glass and the inner space	Yes, independent warming of the glass and the inner space	Yes, independent warming of the glass and the inner space
	Yes	Yes	Yes
	In TVK-07-O-V modification, by means of feeding and removal of water		
	Yes (optional)	Yes (optional)	
	Yes (optional, OPTIC-IS)		Yes: signal transmission range up to 20 km, 12-24 VDC, 0.2 A, operating wavelength Tx1310/Rx1550 nm, data transfer rate 10/100 Mbit/sec, optic cable type - monofilament single mode 9/125 m
	- Protective pneumatic lens hood (optional) - Duplex-07e - glass cleaning system (optional)		
	- 525*170*160/230 (with IR/without IR) - Ø113*240 Upon request, the body length can be of the following frame sizes: R1 – 400 R2 – 300 R3 – 200	276*92*117 (with mounting bracket and visor)	- 499*161*160 - Ø113*240 Upon request, the body length can be of the following frame sizes: R1 – 400 R2 – 300 R3 – 200
	Stainless steel/ Powder-coated low-carbon steel	Aluminum alloy AK 12 ПЧ/ Stainless steel	Stainless steel/ Powder-coated low-carbon steel
	2	1	8
	5...12 (into equipment casing) Up to 22 (along the external insulation)	5...12 (into equipment casing) Up to 22 (along the external insulation)	5...12 (into equipment casing) Up to 22 (along the external insulation)
	Bracket (included in the supply package), fastening adapters for post/angular mounting (optional), safety appliance (optional)	Bracket (included in the supply package), fastening adapters for post/angular mounting (optional)	Bracket (included in the supply package), fastening adapters for post/angular mounting (optional)
	Video equipment (optional), wires (optional), visor (optional), input devices, protective pneumatic lens hood (optional), fastening adapters for post/angular mounting (optional), safety appliance (optional)	Video equipment (optional), visor (optional), input devices, fastening adapters for post/ angular mounting (optional)	Video equipment (optional), wires (optional), visor (optional), input devices, fastening adapters for post/ angular mounting (optional)
	12,5...17,0	2,0...3,0	12,5
	10	10	10
	5	5	5

NEW

MK-07e

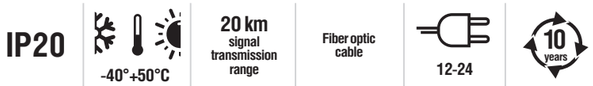
Explosion-Proof Media Converters

The MK-07e media converters are intended for providing safe information interaction between the wired interface of the general induatrial data transfer network Ethernet-10/100Base-T/TX and explosion-proof optical interface of the explosion-proof Ethernet-100Base-LX WDM data network.
It is used at chemical, oil and gas production, oil and gas processing industry enterprises and in explosive areas of other production facilities.



TECHNICAL DATA:

Modification	MK-07e-11EXX Explosion-proof media converter for installation in explosion-proof body type TVK-07-S/N OPTIC-IS	MK-07e-13EXX Media converter for installation in explosion-proof body type TVK-07-S/N-I2-OPTIC	MK-07e-22EXX Frameless media converter for placing in a chassis for installation in a hardware rack	MK 07e-23EXX Boxed media converter for installation on a DIN rail with power supply from an external power source (power supply unit)
	NEW 	NEW 	NEW 	NEW 
Body type	Frameless It is an Ex-component meant for application as part of another explosion-proof product, for example, TVK-07-S/N-OPTIC-IS	ME 22.5 type enclosure for installation on a 35 mm DIN raillt is an Ex-component meant for application as part of another explosion-proof product, for example, TVK-07-S/N-I2-OPTIC	Frameless design for installation in the MK-07e-Sh190AS chassis for installation in a 19" hardware rack It is intended for use outside the explosive area to connect to explosion-proof equipment installed in the hazardous area via the optical information interface with intrinsically safe optical radiation 'op is'	ME 22.5 type enclosure for installation on a 35 mm DIN rail It is intended for use outside the explosive area to connect to explosion-proof equipment installed in the hazardous area via the optical information interface with intrinsically safe optical radiation 'op is'
Enclosure explosion proofness marking	Ex op is IIIC Da U / Ex op is I Ma U / Ex op is IIC T6 Ga U	Ex op is IIIC Da U/ Ex op is I Ma U/ Ex op is IIC T6 Ga U	[Ex op is Da] IIIC/ [Ex op is Ma] I/ [Ex op is T6 Ga] IIC	[Ex op is Da] IIIC/ [Ex op is Ma] I/ [Ex op is T6 Ga] IIC
Ingress protection rating	IP00	IP20	IP00	IP20
Operating temperature range, °C	-40...50	-40...50	-40...50	-40...50



TECHNICAL DATA:

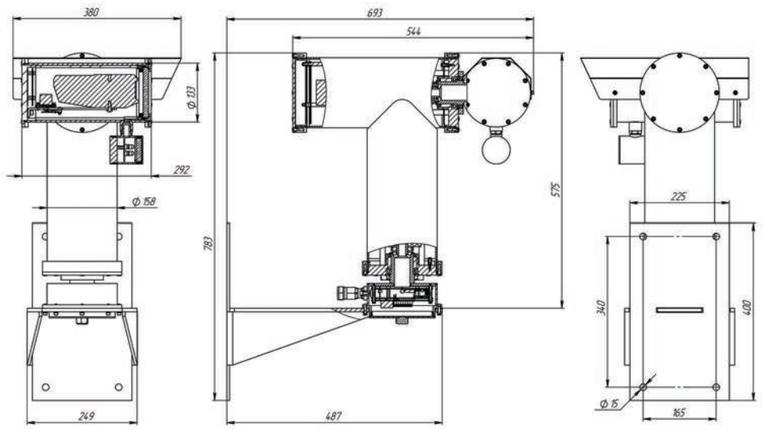
Modification	MK-07e-11EXX Explosion-proof media converter for installation in explosion-proof body type TVK-07-S/N-OPTIC-IS	MK-07e-13EXX Media converter for installation in explosion-proof body type TVK-07-S/N-I2-OPTIC	MK-07e-22EXX Frameless media converter for placing in a chassis for installation in a hardware rack	MK-07e-23EXX Boxed media converter for installation on a DIN rail with power supply from an external power source (power supply unit)
Rated voltage, V	12	24	12	24
Wired network interface type	Ethernet-10/100Base-T/TX	Ethernet-10/100Base-T/TX	Ethernet-10/100Base-T/TX	Ethernet-10/100Base-T/TX
Maximum data transfer rate via wired network interface, Mbit/sec	100	100	100	100
Data transfer method	Duplex, half duplex	Duplex, half duplex	Duplex, half duplex	Duplex, half duplex
Voltage, V: - interface galvanic isolation - input voltage on the receiver line - output voltage on the transmitter line - direct current - effective voltage of alternating current	 - 1500 - 5,0 - 3,6 - 350 - 247	 - 1500 - 5,0 - 3,6 - 350 - 247	 - 1500 - 5,0 - 3,6 - 350 - 247	 - 1500 - 5,0 - 3,6 - 350 - 247
Wired interface transmitting distance, m	100	100	100	100
Optical interface type	Ethernet-100Base-LX WDM	Ethernet-100Base-LX WDM	Ethernet-100Base-LX WDM	Ethernet-100Base-LX WDM
Maximum data transfer rate via optical interface, Mbit/sec	155	155	155	155
Laser type	Fabry–Perot (FP) laser	Fabry–Perot (FP) laser	Fabry–Perot (FP) laser	Fabry–Perot (FP) laser
Operating wavelength of the transmitter / receiver, nm	1310 / 1550	1310 / 1550	1310 / 1550 1550 / 1310	1310 / 1550 1550 / 1310
Optical transmitter power, min. / max., dBm (mW)	-14 (0,04) / -8 (0,16)	-14 (0,04) / -8 (0,16)	-14 (0,04) / -8 (0,16)	-14 (0,04) / -8 (0,16)
Relative noise intensity of optical transmitter dB/Hz	-117	-117	-117	-117
Optical receiver sensitivity, dBm	-34	-34	-34	-34
Maximum input optical power of the receiver, dBm	-5,0	-5,0	-5,0	-5,0
Optical receiver sensitivity, dBm	Monofilament single mode 9/125 um	Monofilament single mode 9/125 um	Monofilament single mode 9/125 um	Monofilament single mode 9/125 um
Optical signal transmitting length, km	20	20	20	20
Light indication	Yes	Yes	Yes	Yes
Mounting method	Depends on the selected Ex-body	Installation on a 35 mm DIN rail	Installation in the MK-07e-Sh190AS chassis for installation in a 19" hardware rack Chassis TRC-190-AC MOXA, 220 V, 1,5 A, 440*300*90 mm, 5.2 kg, 0...60°C	Installation on a 35 mm DIN rail
Available packages			MK-07e-Sh190AS chassis for installing up to 19 modules of MK-07e-22EXX media converters (optional)	Power supply unit (optional)
Max. overall dimensions, mm	75*83*32	114*99*22,5	123*87*21	114*99*22,5
Max. weight, kg	0,1	0,13	0,115	0,13
Lifetime, min., years	10	10	10	10
Warranty period, years	3	3	3	3

TOR-07e-Ex

Pan/Tilt Surveillance System TOR

The pa/tilt surveillance system TOR-07e-Ex is designed for operation as part of surveillance systems, including CCTV systems in explosive areas. It is a panning and tilting device with installed IP camera. The system can carry out remote position control of the installed IP video camera in two planes (vertical and horizontal) as well as to change the viewing angle (image scale) and focusing of the video camera.
It is used at chemical, oil and gas production, oil and gas processing industry enterprises and in explosive areas of other production facilities.

DIMENSIONS



1Ex d e IIC T6 Gb X | PB Ex d I Mb X | IP66/ IP68 | -60°+50°C | 360° | IP camera | Stainless steel

TECHNICAL DATA:

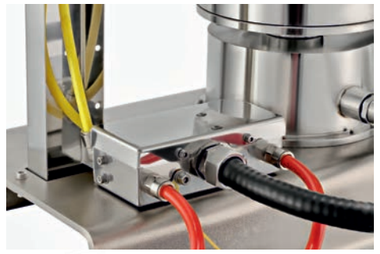
Enclosure explosion proofness marking	Ex tb IIIC T80°C Db X 1Ex d IIC T6 Gb X / 1Ex d e IIC T6 Gb X PB Ex d I Mb X	
Ingress protection rating	IP66/IP68	
Operating temperature range, °C	Nf1: -60...50 NF4: 1...50	
Supply voltage, V	230 VAC There is a voltage converter that provides 12V power feed for video-equipment	
Maximum power consumption, W	Nf1 - 200, NF4 - 40	
Movement orientation	Horizontal	Vertical
Turning angle, degree	0...360 (unlimited)	±90
Rotation speed, deg./sec	up to 24	up to 24
Positioning error, max., deg.	±0,5	
Furnishing with a video camera	IP video camera, subject to agreement with the customer and the manufacturing factory (optional) The camera must have RS485 Pelco-D communication interface for control of PTZ functions of the system	
Fitting with thermal-imaging equipment	Yes (optional)	
Power consumption of video equipment inside the housing, max., W	6	
Number of rounds	Depends on the video camera set of functions	
Number of position settings in a round	Depends on the video camera set of functions	
Interface type (control protocol)	Ethernet	
Cold start mode	Yes (NF1)	
Warming up	Yes, independent warming of the glass and the inner space	
Protection from overheating	Yes	
IR lighting	Yes (option): -Automatic ON/OFF under illumination of 25±5 lx -Emission wavelength 850 um -Beam angle 15/30/90/120° Lighting distance 100/80/40/25 m	
Sight glass cleaning system	Duplex-07e-Ex-TOR - explosion-proof contactless glass cleaning system (optional)	
Max. overall dimensions (without bracket), mm	540*330*600 Dimensions are subject to change upon agreement with the customer, but they shall not exceed 200x200x400	
Enclosure material	Stainless steel	
Number of cable glands in the box body	3	
Cable entry diameter, mm	5...12 (into equipment casing) up to 22 (along the external insulation)	
Installation mode	Mounting stand (optional), wall mounting attachment (option)	
Available packages	Video equipment (optional), wires (optional), IR lighting (optional), visor (optional), glass cleaning system Duplex-07e-Ex-TOR (optional), input devices, mounting stand (optional), wall mounting attachment (optional)	
Max. weight, kg: - with 1 housing - with 2 housings - wall mounting attachment - mounting stand for TOR-07e-Ex - mounting stand for TOR-07e-Ex + Duplex-07e-Ex-TOR	 - 40,0 - 50,0 - 11,0 - 7,0 - 8,0	
Lifetime, min., years	10	
Warranty period, years	3	

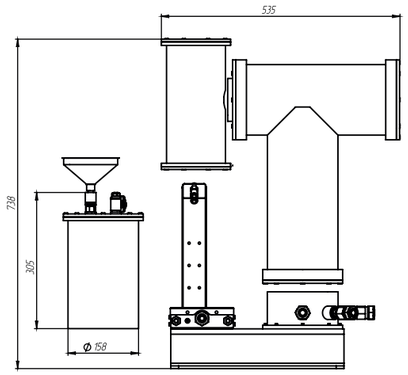
Duplex-07e

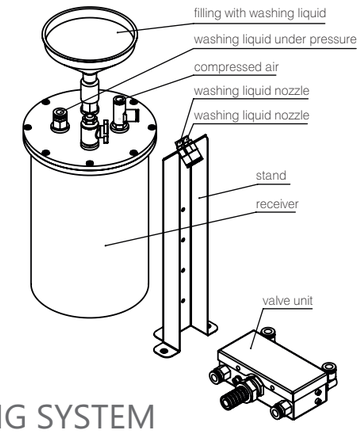
Glass Cleaning System

The class cleaning system Duplex-07e-Ex is designed for touch-free removing of any dirt from thermohousing sight glasses. Cleaning is an important element of efficient CCTV monitoring since it guarantees clear picture irrespective of ambient conditions and decreases the maintenance requirement. The system is designed for TVK and TOR series devices manufactured by Eridan JSC.
It is used at chemical, oil and gas production, oil and gas processing industry enterprises and in explosive areas of other production facilities.

3 PATENTED 0





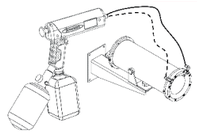
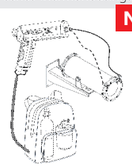


ADVANTAGES OF THE CLEANING SYSTEM

- Touch-free washing and drying of the sight glass
- Operation in Ex zones and in corrosive environments
- Sight glass zero wear
- Operation at low temperatures
- Removal of all types of contamination
- Capability to install at a height
- Remote location of the liquid storage tank is possible

NEW

TECHNICAL DATA:

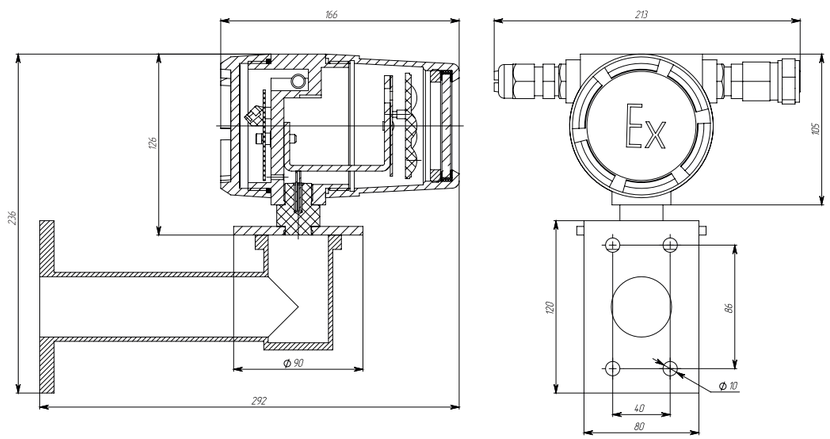
Modification	Duplex-07e-Ex-TOR Explosion-proof glass cleaning system for pan/tilt system TOR-07e-Ex	Portable Duplex-07e-Ex-TVK Explosion-proof glass cleaning system for the TVK-07-S/N series thermohousings	Extended capacity portable Duplex-07e-Ex-TVK Explosion-proof glass cleaning system for the TVK-07-S/N series thermohousings
		NEW 	NEW 
System composition	1. Receiver 2. Solenoid operated valves assembly 3. Nozzle assembly (washing and air) 4. Set of hoses 5. Control module (optional)	1. Compressed air tank 2. Pressure regulator 3. Washing liquid tank 4. Set of hoses 5. Control panel 6. Flange with nozzles	1. Compressed air tank 2. Pressure regulator 3. Washing liquid tank 4. Set of hoses 5. Control panel 6. Flange with nozzles 7. Backpack for transportation
Operation principle description	Upon command from the operator or a contamination monitoring sensor of the sight glass, a cleaning cycle consisting in knocking off of dirt with high pressure water (or other liquid) will commence. Then, the sight glass is air-dried thus removing all residual dirt. Configuration mode for water and air supply sequence, number of cycles and their duration is available.	During patrolling, the operating staff shall connect the control panel of the cleaning system to the brought-out pulse tubes. Launches dirt knocking off cycle with high pressure water jet (or any other solvent). Then, the sight glass is air-dried thus removing all residual dirt. Water and air supply can be varied as well as the number of cycles and their duration.	
Types of contamination that can be cleaned	1. Organic: petroleum-oil, oil, street dirt/mud, paints, grease 2. Non-organic: combustion deposits, smoke-black, carbon, furnace black, cement 3. Biological: dust, spider web		
Possible washing liquids	1. Neutral: water 2. Acid: cetric acid	3. Alkaline: soda ash, caustic ash, soda crystals, trisodium phoshate, sodium metasilicate 4. Organic: alcohols, solvents, SAS	
Enclosure explosion proofness marking	- Receiver: I Mb/ II Gb c T6/ III Db c T80°C - Valve unit: PB Ex mb I Mb X/ 1Ex mb IIC T6 Gb X/ Ex mb IIIC T80°C Db X - Nozzle assembly (washing and air): I Mb/ II Gb c T6/ III Db c T80°C - Control unit: 1 Ex d IIC T6 Gb X/ Ex tb IIIC T80°C Db X	I MB / II GB C T6 / III DB C T80°C	
Ingress protection rating	IP66	IP66	IP66
Operating temperature range, °C	-30...50, The minimum temperature allowing operation of the system will depend on the temperature-dependent properties of the liquid filled in the washer tank		
Supply voltage, V	24 VDC / 230 VAC		
Maximum power consumption, W	Nf1 - 200, NF4 - 40		
Tank capacity, l		0,8	3
Tank pressure, MPa		30	30
Number of solenoid operated valves	2	2	2
Operating air pressure, min., MPa	0,6-1,0	0,6-1,0	0,6-1,0
Allowable change in pressure from minimum to maximum, max., MPa	0,9		
Washing liquid tank capacity, min., l	5	0,5-1,0	2-4
Elevation difference of installation between the valve unit and the washer tank, max., m	30	(30) leading to washing capacity decrease	(30) leading to washing capacity decrease
Consumption for one cycle of cleaning, max.: - water, l - air, m3	- 0,05 - 0,1	- 0,125 - 0,05	- 0,125 - 0,05
Possibility of remote control of the cleaning process	Yes, taking into account the available video camera functions	No, at site	No, at site
System portability (portable system)		Yes	Yes
Available packages	Control module (optional), mounting stand (common for TOR-07e and Duplex-07e)	Replacement washing liquid tanks	Double washing liquid tank capacity
Max. weight, kg	4,5	3,5	10
Lifetime, min., years	10	10	10
Warranty period, years	3	3	3

IK-07e

Explosion-Proof Infrared Spotlamp

Explosion-proof infrared spotlamp IK-07e is designed for continuous operation as part of CCTV system when natural illumination is not sufficient for normal operation of the video camera.
The spotlamp provides efficient illumination of the monitored sector in explosive areas at chemical, oil and gas production, oil and gas processing industry enterprises and in explosive areas of other production facilities.

DIMENSIONS



1ExdIICT6 X | IP67 | -60°+60°C | 130 170 105 mm | 30°, 50° 70°, 120° | 850 nm | Aluminum | 10 years | 5 years

TECHNICAL DATA:

Enclosure explosion proofness marking	1ExdIICT6 X	
Ingress protection rating	IP67	
Operating temperature range, °C	-60...60	
Supply voltage, V	12-24 VDC, 24 VAC	
Maximum power consumption, max., W	9,2	
Emission wavelength, nm	850	
Beam parameters* *data are shown for CCD-matrix with sensitivity of 0.03 lux	Radiation angle, °	Lighting distance, m
	30	80
	50	65
	70	50
	120	30
Photosensor off-delay, sec.	20±5	
Automatic enabling/disabling of spotlight with hysteresis, illumination level, lux	18±5	
Radiation power selection jumper	Full/half power	
Max. overall dimensions (with bracket and cable glands), mm	105*130*170	
Enclosure material	Aluminum alloy	
Number of cable glands in the box body	2	
Cable entry diameter, mm	6...12 (into equipment casing) up to 22 (along the external insulation)	
Spotlamp installation mode	Bracket (included in the supply package)	
Available packages	Input devices	
Max. weight, kg	2,2	
Lifetime, min., years	10	
Warranty period, years	5	

INSTRUMENTS AND DEVICES

This section comprises instruments and devices, which facilitate use of other equipment designed and manufactured by Eridan JSC.

Instruments and devices may be installed in open spaces and enclosed areas of different buildings and structures, as well as on river and sea-going vessels and production facilities, where explosive mixtures of air and combustible gases or vapors may be present.

They may be used at chemical, oil and gas production, oil and gas processing and other plants with explosion hazardous areas.

Ex-TEST

Explosion-Proof Instrument for Functional Testing of Heat Fire Detectors

Explosion-proof instrument for functional testing of heat fire detectors Ex-TEST allows checking IP103-2/1-TR, IP101-07e, IP101-07em detectors and their analogs (in terms of sensing element design) without disassembly, right on the installation site as well as the loop and the FACP.
Ex-TEST is used at chemical, oil and gas production, oil and gas processing industry enterprises and in explosion hazardous areas of other production facilities.

1Exs [ib] IICT3 X | IP54 | -20°+60°C | 120 × 300 × 300 mm | 3 hours | 9 kg | 10 years | 3 years

TECHNICAL DATA:

Enclosure explosion proofness marking	1Exs[ib]IICT3 X
Ingress protection rating	IP54
Operating temperature range, °C	-20...60
Heating temperature range of the MHH, °C	50...162±2
Emergency shutdown temperature, °C	167±3
Supply voltage, V in offline mode with the battery in charge	 10,1...14,5 100...240 (battery charge control)
Maximum current consumption of MHH, max., A	4,8
Continuous operation time with battery fully charged, min., h	3, battery charge control
Protection	- MHH cable protection against opening and short-circuiting - Protection from overheating
Instrument max. overall dimensions, mm	300*300*120
MHH cable overall dimensions: MHH cable length, m Max. MHH inside diameter, mm Max. insert inside diameter, mm Max. MHH depth, mm	 3...5 (upon request) 16,5 6,0 160,0
Enclosure material	Aluminum alloy
Max. weight, kg	9,0
Lifetime, min, years	10
Warranty period, years	3

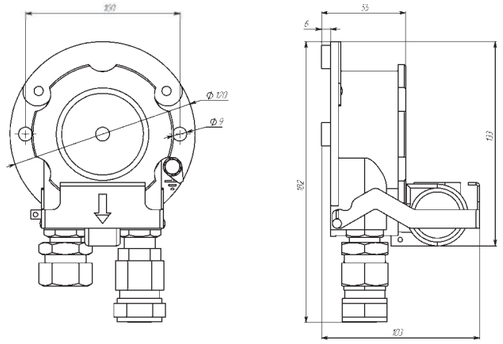
IP535-07e-START

Explosion-Proof Remote Start-Up Devices

PATENTED

The explosion-proof remote start-up device IP535-07e-START is designed for manual activation of fire fighting systems in explosive areas or areal of general industrial purpose.
It is used at chemical, oil and gas production, oil and gas processing industry enterprises and in explosive areas of other production facilities.

DIMENSIONS

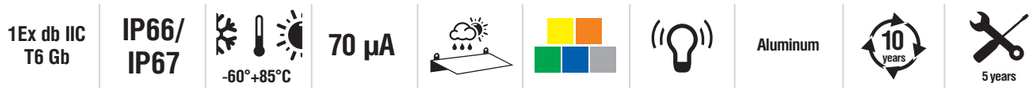


DESIGNATION

LAUNCH OF FIRE FIGHTING	LAUNCH OF SMOKE REMOVAL	EMERGENCY EXIT	EMERGENCY STOP	START
				
launch of automatic gaseous fire fighting equipment (color - yellow)	launch of smoke removal systems (color - orange)	generation of emergency signals or signals of emergency exit unlocking (color - green)	shutdown of automatic gaseous fire fighting equipment (color - blue)	application of the UDP is defined by the user (color - grey)

DEVICE CLASSES

IP535-07e-START-I1 is designed for manual activation of fire-safety systems; when activated, it provides circuit closing
IP535-07e-START-I2 is designed for manual activation of fire-safety systems when operating in fire alarm loops;
it is activated by fire-alarm circuit opening (series connection) or closing (parallel connection)



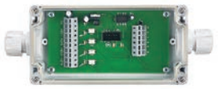
TECHNICAL DATA:

Modification	IP535-07e-START (I1, I2) Explosion-proof remote start-up device	IP535-07ea-START Addressable explosion-proof remote start-up device	IP535-07ea-RS-START Addressable explosion-proof remote start-up device
			
Enclosure explosion proofness marking	1Ex db IIC T6 Gb Ex tb IIIC 85°C Db	1Ex db IIC T6 Gb Ex tb IIIC 85°C Db	1Ex db IIC T6 Gb Ex tb IIIC 85°C Db
Ingress protection rating	IP66/IP67	IP66/IP67	IP66/IP67
Operating temperature range, °C	-60...85	-60...85	-60...85
Maximum switching power, max., W (for I1)	10		
Maximum switching voltage, V (for I1)	60		
Maximum switching current, A (for I1)	0,5		
Maximum current consumption, max., mA (for I2)	0,07	1,0	Standby mode - 5 In activation mode - 10 During polling - 20
Supply voltage, V (for I2)	8...28	15...39	8...28
Driving element	Magnetically-controlled, vibration-resistant, shock-proof	Magnetically-controlled, vibration-resistant, shock-proof	Magnetically-controlled, vibration-resistant, shock-proof
Possibility of connection to addressable loop	Yes (by means of setting the address marks)	Yes (via the Dozor-07a protocol) Maximum number of addressable devices to be connected: 255	Yes (in case of transferring of signal via communication channel RS-485 with Modbus RTU protocol) Maximum number of addressable devices to be connected: 32
Supported protocol		Dozor-07a	Modbus RTU
Max. overall dimensions (without cable glands and bracket), mm	120*135*110	120*135*110	120*135*110
Enclosure material	Aluminum alloy AK 12 ПЧ Vandal-proof design	Aluminum alloy AK 12 ПЧ Vandal-proof design	Aluminum alloy AK 12 ПЧ Vandal-proof design
Light indication	Yes	Yes	Yes
Number of cable glands in the body	2	2	2
Max. cable entry diameter, mm	6...12 (into equipment casing) up to 22 (along the external insulation)	6...12 (into equipment casing) up to 22 (along the external insulation)	6...12 (into equipment casing) up to 22 (along the external insulation)
Detector installation mode	To the surface by means of the mounting hole with the cable glands facing down	To the surface by means of the mounting hole with the cable glands facing down	To the surface by means of the mounting hole with the cable glands facing down
Available packages	Input devices, visor (optional), removable element (optional)	Input devices, visor (optional), removable element (optional)	Input devices, visor (optional), removable element (optional)
Max. weight, kg	1,0	1,0	1,0
Lifetime, min, years	10	10	10
Warranty period, years	5	5	5

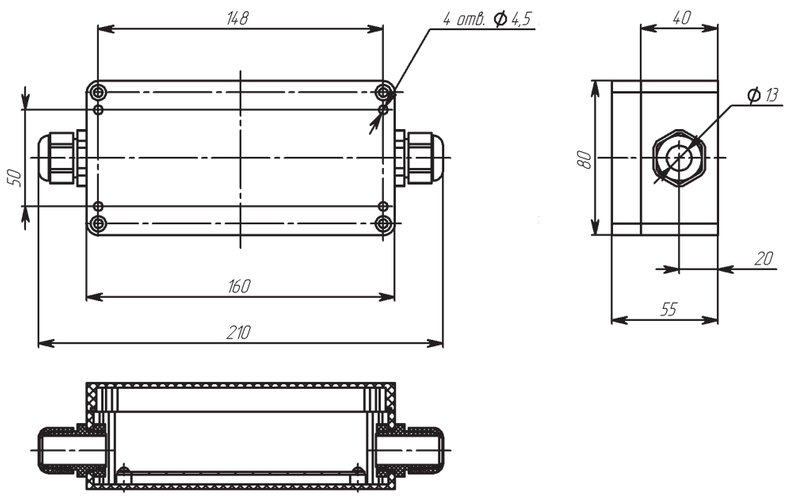
UUO

Annunciator Controller

The external annunciator controller UUO (UUO-RGB) provides possibility to connect the annunciator to the discrete outputs (for example, relays) of fire alarm panels or controllers. Use of the annunciator EKRAN-INFO or EKRAN-INFO-RGB together with the UUO (UUO-RGB) allows replacing of up to four separate annunciators. Communication with the annunciator is carried out via the RS-485 interface with galvanic separation unit and the communication line controller. The maximum length of the communication line is 1 km. The UUO (UUO-RGB) is located outside the explosive area.



DIMENSIONS



TECHNICAL DATA:

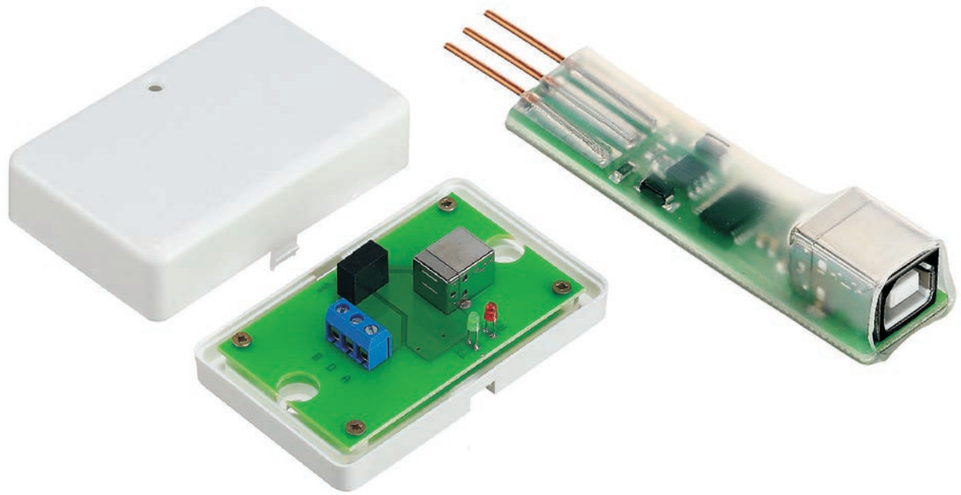
Modification	UUO EKRAN-INFO annunciator controller in a G258C sealed casing	UUO EKRAN-INFO annunciator controller in an open DIN casing	UUO-RGB EKRAN-INFO-RGB annunciator controller in a G258C sealed casing	UUO-RGB EKRAN-INFO-RGB annunciator controller in an open DIN casing
				
Controlled annunciator type	EKRAN-INFO	EKRAN-INFO	EKRAN-INFO-RGB	EKRAN-INFO-RGB
Number of annunciators to be connected	1	1	1	1
Ingress protection rating	IP54		IP54	
Operating temperature range, °C	-10...50	-10...50	-10...50	-10...50
Supply voltage, V	12-24 VDC	12-24 VDC	12-24 VDC	12-24 VDC
Maximum power consumption, A	0,15	0,15	0,15	0,15
Number of configured discrete outputs (control loops)	4	4	4	4
Interface for communication with the annunciator	RS-485 with galvanic separation unit	RS-485 with galvanic separation unit	Yes (in case of transferring of signal via communication channel RS-485 with Modbus RTU protocol)	Yes (in case of transferring of signal via communication channel RS-485 with Modbus RTU protocol)
Baudrate, baud	9600	9600	9600, 19200, 38400, 57600, 115200 (selection by means of switches)	
Supported protocol			Modbus RTU	Modbus RTU
Max. overall dimensions, mm	210*80*55	70,5*96*60	210*80*55	70,5*96*60
Enclosure material	Plastic	Plastic	Plastic	Plastic
Number of cable glands in the body	2		2	
Max. cable entry diameter, mm	6...12 (into equipment casing)	Connection of wires, cross-section 0.08-1.5 mm^2	6...12 (into equipment casing)	Connection of wires, cross-section 0.08-1.5 mm^2
Installation of the annunciator at site	By means of the mounting hole to the surface	On a 32/35 DIN-rail	By means of the mounting hole to the surface	On a 32/35 DIN-rail
Max. weight, kg	0,2	0,2	0,2	0,2
Lifetime, min, years	10	10	10	10
Warranty period, years	5	5	5	5

PI-1, PI-2

PI-1 and PI-2 USB ↔ RS-485 Interface Converters

USB ↔ RS-485 interface converters are designed for configuring the annunciator EKRAN-INFO and communication with the FACP Dozor-1A with the PC for setting it up and for transfer (reading and recording) of data when working with different applications. The following functions are available for the user:
- Recording of the created configuration into the annunciator EKRAN-INFO or the FACP Dozor-1A
- Reading the existing configurations in the device or the annunciator
- For the FACP Dozor-1A, reading of the event log, monitoring of the system status, firmware upgrading.

PI1: Connection of one or a group of Dozor-1A devices to PC in order to work with the software. The PI1 unit is connected directly to the device's terminals. The communication line between the PI1 and the PC may be several meters long (1-2 m).
The PI2 differs from the PI1 by its galvanic separation, owing to which communication is much more jam-resistant, and which allows laying the lines (RS-485) from the FACP-1A to the PI2 up to several kilometers long.



TECHNICAL DATA:

Modifications	PI-1	PI-2
Max. overall dimensions, mm	70*20*15	90*60*22
Weight, kg	0,2	0,2
Communication line length from the FACP to the device, max., m	2,0	Up to several km
Power supply	From USB port	
Maximum current consumption, mA	80	
Levels and output capacity of the RS-485 line	USB standard	
Lifetime, min, years	10	
Warranty period, years	5	

TEST LANTERNS

Explosion-proof test lanterns for checking of IPP-07e Gelios series flame detectors

The test lantern allows checking the IPP-07e Gelios series flame detectors and their analogs without disassembly, at the installation site as well as the loop and the FACP. It is used at chemical, oil and gas production, oil and gas processing industry enterprises and in explosion hazardous areas of other production facilities.

TECHNICAL DATA:

Designation	Explosion-proof test set No. 1 and No. 2	Test lantern Tulpan TF-2Ex
For detector checking	IPP-07e-330-1/2 Gelios 2 IR: - I1 - Explosion-proof test set No. 1 - I2, I3 - Explosion-proof test set No. 2	- IPP-07ea-RS-330-1 Gelios 3 IR - IPP-07ea-RS-329/330-1 Gelios IR/UV
Enclosure explosion proofness marking	1Ex d IIB T4 Gb X	1Ex d IIB T4 Gb X
Ingress protection rating	IP65	IP65
Operating temperature, °C	0...55	0...55
Operating range of coverage, m	3	4
Min. continuous operation time at an ambient temperature of 0°C, h	0,5	0,5
Max. overall dimensions, mm	89*165*96	89*165*96
Enclosure material	Aluminum	Aluminum
Supply package	The product is designed for functional checking of the flame detector in explosive and non-explosive areas. The product mimics the electromagnetic emission of flame. Supply package: - Test lantern - Hollow head screw hex wrench 3 mm and 0.89 mm - AC/DC power adapter, 12 V, 0.3 A - Optical attachment - Replacement lamp	The product is designed for functional checking of the flame detector in explosive and non-explosive areas. The product mimics the electromagnetic emission of flame. Supply package: - Test lantern - Hollow head screw hex wrench 3 mm and 0.89 mm - AC/DC power adapter, 12 V, 0.3 A
Weight without batteries, max., kg	1,2	1,2
Lifetime, min., years	10	10
Warranty period, years	2	2
Certificates available	- Certificate of compliance No. C-RU.ПБ34. В.01828 (No. 0001265) - Certificate of compliance No. TC RU C-RU.AA87.B.00217 series RU No. 0406128	- Certificate of compliance No. C-RU.ПБ34. В.01828 (No. 0001265) - Certificate of compliance No. TC RU C-RU.AA87.B.00217 series RU No. 0406128

DIALOG-EX

Analog-addressable system is a modern automated system based on continuous measurement of the controlled parameters with sensors. All data from the detectors of this system type are transmitted to the control panel, where the change of situation at the facility is analyzed using special algorithms. The system is considered to be one of the most advanced and effective ones.

DIALOG-EX FEATURES:

- Fire outbreak place detection accuracy and local application fire suppression;
- Operability self-check of the whole system and identification of the cause of failures in case there is any;
- Survival in case of loop opening and short-circuit;
- Integrated circular loop for notification, annunciation and fire-extinguishing systems;
- Control of all functions via the fire alarm control panel;
- No need for operational check;
- Possibility to connect zero-address devices to the loop;
- Cost cut thanks to the use of modern technologies.

ADDRESSABLE DOES NOT MEAN ANALOG-ADDRESSABLE!

In non-addressable and addressable systems 'fire decision' is made by the detector itself and then it is transmitted to the fire alarm control panel. In analog-addressable systems values of the parameter (temperature, smoke content within the premises) monitored by the detector are transmitted to the FACP. The FACP constantly monitors ambient conditions in all the premises and on the basis of these data makes decision not only on generation of 'Fire' signal, but also on generation of 'Warning', 'Fault' and other signals. The 'decision' is made by the fire alarm control panel and not the detector.

The AAS constantly monitors ambient conditions in the premises promptly detecting start of temperature (or smoke content) change and sends a warning signal to the console. Therefore, the AAS provides early detection of fire. This means that fire can be easily extinguished thus minimizing possible losses for the facility. In analog-addressable devices offer a possibility to individually set not only 'Fire' and 'Warning' signal generation levels for each detector but also to define algorithms of their combined operation. This means that the AAS can create an optimal fire alarm system at a facility because it allows creating early fire detection system in the most appropriate way for each facility taking into consideration its individual features.

DIALOG-EX - ANALOG-ADDRESSABLE SYSTEM FOR EXPLOSIVE AREAS.

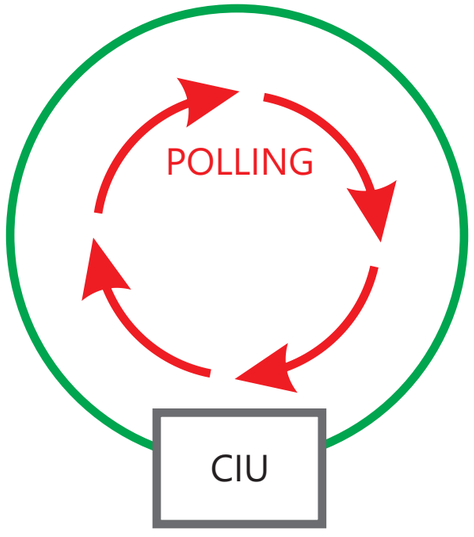
DETERMINATION OF EXACT LOCATION OF FAILURE AREA OR FIRE OUTBREAK. During polling, the fire alarm control panel reads in unique sequential numbers of all devices in the loop, thanks to which the operator always knows the exact place of the event in the periphery (loop opening, short-circuiting, failure of any of the devices or fire outbreak).

Number of devices in the loop: up to 225 (systems may as well be extended by installing additional fire alarm control panels DOZOR-1A). This allows considerable cost reduction during installation of the system and use of detectors powered by the loop reduces costs for laying new lines of alarm system by half as a minimum. In accordance with the safety requirements, where installation of two detectors is necessary in case of non-addressable loop, in addressable loop one analog-addressable detector is enough. Besides, use of different address marks provides possibility to use a wide range of non-addressable devices and to control and monitor operation of the facility's automatic fire fighting and engineering systems of any complexity level by simply updating and building up the existing explosive area safety system to up to 128 addressable loops and more.

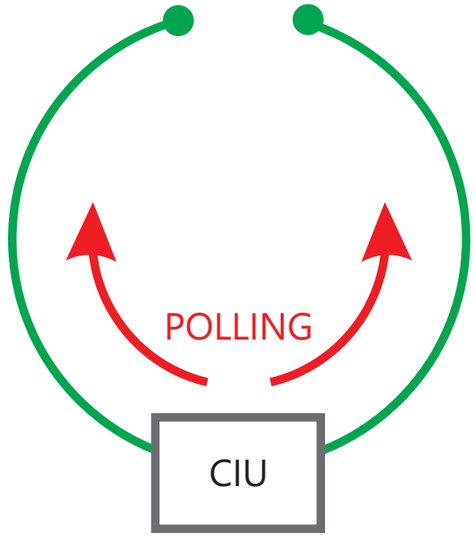
DETECTOR PERFORMANCE MONITORING (SYSTEM NO. 1 SURVIVABILITY). In Dialog-Ex AAS there cannot by any faulty detector not detected by the FACP. By way of data exchange with each device in sequence, the device conducts polling via Dozor-07a protocol every 3 seconds. As a result of each device polling, new information on the status of each location of addressable detectors and external devices and their condition is generated, thus providing continuous monitoring of the facility and system elements.

CIRCULAR LOOP (SYSTEM NO. 2 SURVIVABILITY). Use of circular alarm loop architecture allows normal operation of Dialog-Ex in case of short-circuit or loop opening with precise detection of exact failure place and address. At the same time, the system is divided into two radial loops without loosing their functionality.

CIRCULAR LOOP



TWO RADIAL LOOPS



SYSTEM EFFICIENCY. Dialog-Ex allows not only detecting the place of possible fire outbreak but also it provides for timely activation of the alert system plotting routes of evacuation of people during early stages of fire outbreak, launch of automatic fire suppression system at the fire outbreak site.

SYSTEM PROGRAMMING. Possibility to change sensitivity of the sensors depending on the ambient or operating conditions.

ZERO MAINTENANCE COSTS. Continuous self-checking makes system maintenance and (which is important) system functionality routine tests unnecessary.

INTEGRATION OF ZERO-ADDRESS DEVICES IN DIALOG-EX SYSTEM. Zero-address devices can be easily integrated into the system. It is done by means of installation of corresponding address marks. However, this does not grant these devices the analog function.

INTERGRATION OF DIALOG-EX INTO GLOBAL SECURITY SYSTEMS OF AN ENTERPRISE. Dialog-Ex AAS on the basis of Dozor 1A device provides possibility of integration into 'top-level' security systems such as 'Intellect' and 'Eselta'.

DIALOG-EX - ANALOG-ADDRESSABLE FIRE ALARM SYSTEM FOR EXPLOSIVE AREAS

Legend:

Explosive area

«Dozor-1A»
«DOZOR-07a» protocol

RS-485

PI(2)

RS-485

BR AMR2

UUO

EKRAN-a
Addressable light and acoustic annunciator
- independent control of light and acoustic sections
- additional light section
- continuous pulse operation mode
- continuous annunciator circuits control

KKV-07e-T

EKRAN-INFO

BP-12-24V

KKV-07e-K

BP-12-24V

KKV-07e +AMR2

KKV-07e +AMDSH

KKV-07e +AMP

BP-12-24V

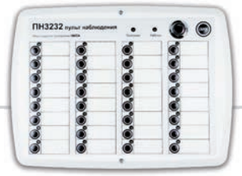
VS-07e-I

IP101-07e

AMR2 relay address mark
- switching load - 60 W
- maximum current consumption from the loop - 1.5 mA
- circuit integrity control in case of circuit opening, short-circuit, power supply failure
- use as a launch circuit at a current of up to 3 A from an external power source

AMDSH address mark
- up to 3 IP101 type zero-address heat sensors
- loop length - up to 50 m
- distinction of actuation of one or two sensors in the loop
- sensors' power supply from the loop

AMP start address mark
- launch channel of 0.15 A during 1 sec.
- maximum current consumption from the loop - 2 mA
- no need for external power source for launching
- launch circuit integrity control
- power supply from the loop



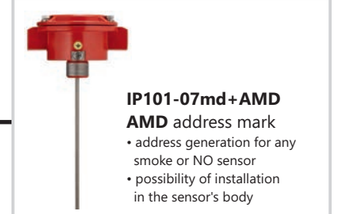
Pn3232 observation panel
- 32 bichromatic LED indicators and 32 buttons
- up to 8 observations panels for one device
- possibility to limit access to the buttons by means of Touch Memory
- indication testing by means of a button on the console

RS-485

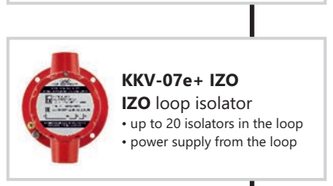
IP535-07ea
Addressable Fire Call Point
- power supply from the loop
- maximum current consumption - 1 mA

IP101-07a

KKV-07e +AMTSH



IP101-07md+AMD
AMD address mark
- address generation for any smoke or NO sensor
- possibility of installation in the sensor's body



KKV-07e+ IZO
IZO loop isolator
- up to 20 isolators in the loop
- power supply from the loop

AMTSH address mark
- up to 10 IP103 type zero-address heat sensors
- loop length - up to 50 m
- distinction of actuation of one or two sensors in the loop

KKV-07e +AMR1

GRV-07e

KKV-07e +AMR2

RB

IP103-2/1-TR +AMT

AMR1 relay address mark
- switching load - 750 W
- maximum current consumption from the loop - 5 mA
- circuit integrity control in case of circuit opening, short-circuit, power supply failure
- use as a launch circuit at a current of up to 3 A from an external power source

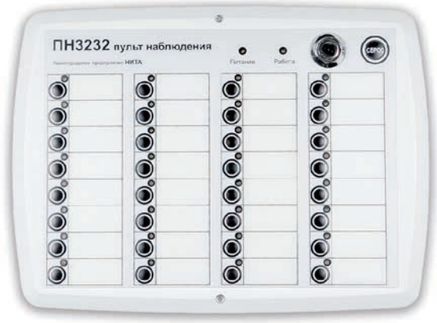
AMR2 relay address mark
- switching load - 60 W
- maximum current consumption from the loop - 1.5 mA
- circuit integrity control in case of circuit opening, short-circuit, power supply failure
- use as a launch circuit at a current of up to 3 A from an external power source

AMT relay address mark
- address generation for any thermal or NC sensor
- possibility of installation in the sensor's body

Pn3232

Observation panel

The PN3232 observation panel is a microprocessor device designed for displaying information on bichromatic LED indicators and controlling the system by means of the buttons.



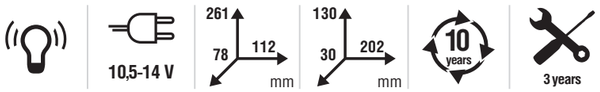
TECHNICAL DATA:

Ingress protection rating	IP30
Operating temperature range, °C	-10...50
Maximum current consumption from power supply source, A	0,15
External power supply source voltage, V	10,5...14
Max. overall dimensions, mm	300*220*15
Body material	PLASTIC
Light indication	Yes
Number of bichromatic LED indicators, pcs.	32
Indicator colores	Green, red
Number of Touch Memory keys providing access to control from the keyboard, pcs.	4
Number of controls (buttons), pcs.	32
Communication channel with the central FACP-1A unit	RS-485
Detector installation mode	By means of the mounting hole to the surface
Number of PN3232 consoles that can be connected to one FACP-1A, pcs.	8
Max. weight, kg	0,3
Lifetime, min., years	10
Warranty period, years	3

Dozor-1A

Addressable Security, Fire Alarm and Control Panel with Dozor-07a Protocol

DOZOR-1A addressable security, fire alarm and control panel is designed for creating an effective security and fire alarm system as well as for full-service control of smoke extraction, ventilation, fire alarm, processing equipment and fire extinguishing of all types (gas, powder, aerosol, water and foam) at small facilities of different assignment both in off line mode and in combination with central surveillance panels and fire alarm control panels.



TECHNICAL DATA:

Ingress protection rating	IP30
Operating temperature range, °C	-10...50
Adjustment of addressable devices at the installation site	Possibility to change sensitivity of the sensors depending of the operating conditions
Supported protocol	Doror-07a
Maximum current consumption from power supply source	- without external devices: 230.0 mA - at the maximum load: 2.0 A
Maximum current consumption of addressable devices from addressable loop, max., mA	280
Supply voltage, V	10,5...14
Addressable loop voltage (at FACP-1A output), V	28...38
Addressable loop resistance (at maximum load), max., Ohm	33
Body material	Plastic with LED indicator and control buttons
Max. overall dimensions, mm	202*130*30
Light indication	Yes
Number of circular addressable loops	1
Maximum number of addressable devices in addressable loop, pcs.	255
Number of Dozor series devices integrated into one network	128
Number of recorded events	4000
Detector installation mode	By means of the mounting hole to the surface
Addressable devices operability check	- Continuous cyclic polling of addressable devices in the system - Full status monitoring for each addressable device - Continuous control of circuit opening and short-circuiting - Out-of-sequence detection of devices that switched into the activation mode
Available packages	FACP-1A-1 (Dozor-07a protocol) -Central unit with an indicator and a keyboard on the device body. FACP-1A-2 (Doror-07a protocol) -Central unit WITHOUT indicator and keyboard on the device body. PI1: connection of one or a group of Dozor-1A devices to PC in order to work with the software. PI2: Connection between the PC and a group of DOZOR series devices for creation of integrated systems as well as for working with software
Max. weight, kg	1,0
Warranty period, years	3
Lifetime, min., years	10

ADDRESS MARKS

The address mark is a microprocessor device intended for generation of address of one thermal or any contact sensor with normally-closed or normally-opened contacts. Application of address marks allows efficient transformation of a conventional threshold detector into an addressable one.

AMT address mark (NC contacts)		The AMT address mark is intended for generation of address of one thermal or any contact sensor with normally-closed contacts The address mark is connected to the addressable loop formed by the FACP-1A through which data transfer and power supply is effected. Application of the AMT allows efficient transformation of a conventional threshold detector into an addressable one. The detector acquires then its own unique address in the system. This provides precise determination of its location when it is actuated. The AMT is a small-size mark and it can be easily installed inside the body of many detectors and explosion-proof switch-boxes KKV-07e. Thanks to that, it can be mounted easily and will become unnoticeable after its installation is complete providing convenience and nice appearance. In addition, cost saving during installation due to reduction of the number of connecting wires and use of cheap sensors may result quite significant as well.
AMD address mark (NO contacts)		The AMD address mark is intended for generation of address of smoke or any contact sensor with normally-open contacts. The address mark is connected to the addressable loop formed by the FACP-1A through which data transfer and power supply is effected. Application of the AMD allows efficient transformation of conventional, threshold detectors, for example, smoke and flame detectors and call points as well as any other sensors with NO dry contacts into addressable ones. In this case the detector acquired its own unique address in the system. This provides precise determination of its location when it is actuated. The AMD is a small-size mark and it can be installed inside the body of many detectors, for example, smoke detectors or call points and explosion-proof switch-boxes KKV-07e.
AMTSH loop address mark (NC contacts) -60°		The AMTSH address mark is intended for generation of threshold-oriented alarm loop (AL) for thermal or any other contact sensors with normally-closed contacts. The address mark is connected to the addressable loop formed by the FACP-1A through which data transfer and power supply is effected. Application of the AMTSH allows formation of threshold-oriented alarm loops for conventional, cheap detectors, for example, thermal detectors, call points, and SMK as well as any other sensors with NC dry contacts. In this case the alarm loop acquires its own unique address in the system and is controlled by the address mark. This provides precise determination of the loop's location in case of actuation or failure. As a matter of practice, the AMTSH is often installed before the premise into which the threshold-oriented loop is brought in. Other options of the address mark application are possible as well.
AMTSH loop address mark (NO contacts) -60°		The AMDSH address mark is intended for formation of threshold-oriented alarm loop for smoke or any other contact sensors with normally-open contacts. The address mark is connected to the addressable loop formed by the FACP-1A through which data transfer and power supply is effected. The address mark provides power supply of power consuming sensors. Application of the AMDSH allows formation of threshold-oriented alarm loops for conventional, cheap detectors, for example, smoke, flame detectors and call points (as well as arbitrarily NO dry contacts). In this case, the loop acquires its own unique address in the system and is controlled by the address mark. This provides precise determination of its location when it is actuated. Actuation of formed threshold-oriented alarm loop is possible both by one and two sensors. As a matter of practice, the AMDSH is often installed before the premise into which the threshold-oriented loop is brought in. Other options of the address mark application are possible as well.

AMR1 Heavy-Current Relay Address Mark -60°		The relay address mark is a microprocessor device with controlled circuit integrity control as per current requirements of the 'Technical Regulations on Fire Safety Requirements' (TRoFSR). The mark is connected to the addressable loop formed by the FACP-1A through which data transfer and power supply is effected. On the one hand, the address mark constantly transfers to the FACP-1A information on its status and on the other hand receives commands to connect and disconnect load from the FACP-1A. The address mark AMR1 is designed for controlling by means of the external load via the relay bridging contacts fire and smoke dampers, production equipment and launching fire-extinguishing modules.
AMR2 Low Consumption Relay Address Mark -60°		The address mark AMR2 is designed to control the external load via the relay bridging contacts with controlled circuit integrity control as per current requirements of the 'Technical Regulations on Fire Safety Requirements' (TRoFSR). The address mark is connected to the addressable loop formed by the FACP-1A through which data transfer and power supply is effected. On the one hand, the address mark constantly transfers to the FACP-1A information on its status and on the other hand receives commands to connect and disconnect load from the FACP-1A. When receiving an activation command, the AMR2 mark not only is able to connect the load but also to work in flashing mode at 1 Hz frequency. The flashing mode in activated mode is often used when various light and acoustic annunciators are connected to the mark. As a matter of practice, the AMR2 is usually used for controlling various annunciators, valves and dumpers (fire, smoke dumpers, etc.), production equipment and for launching (gas, powder, aerosol) fire-extinguishing modules.
AMP Start Address Mark		The AMP start address mark is designed for generation of current pulse in order to activate fire-extinguishing modules or other equipment. It is provided with start circuit integrity control as per current requirements of the 'Technical Regulations on Fire Safety Requirements' (TRoFSR). The address mark is connected to the addressable loop formed by the FACP-1A through which data transfer and power supply is effected. As a matter of practice, the AMP is used for launching of various fire-extinguishing modules, activated by destruction of a pyrotechnic squib. Usually, these are powder fire-extinguishing modules.
IZO Addressable Loop Isolator -60°		The addressable loop isolator IZO is designed for isolating of a portion of the loop in case of short-circuiting. The isolator in connected to the addressable loop formed by a FACP-1A, and it is an independent device that is only fed from the loop. It is activated by the loop disruption. On a practical level, presence of various IZO's in one addressable loop allows a more precise localization of the damaged portion maintaining operability of the rest of the addressable devices.

ADDRESSABLE EQUIPMENT:

IP101-07a
Explosion-Proof Addressable Programmable Heat Fire Detector
It is designed for detection of any inflagration followed by temperature rising within the monitored area and for transferring to a receiving and controlling instrument of the current temperature value, as well as for detection of fire signs in case the ambient temperature exceeds the preset threshold and/or the temperature growth rate. It is designed for operation only as part of addressable loop of devices with support of Dozor-07a protocol.

IP535-07ea (A, B)
Explosion-Proof Addressable Fire Call Point
It is used for manual generation of fire alarm signal in explosive areas; it is designed for sending an alarm message to the fire alarm loop when the driving element is pulled out.

It is designed for application only as part of addressable loop of instruments supporting the Dozor-07a protocol

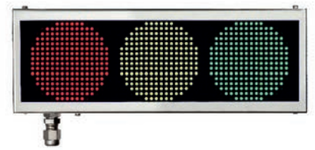
IP535-07ea-START
Addressable explosion-proof remote start-up device
It is designed for launching the executive mechanisms of fire-fighting, smoke removal systems, etc., for application only as part of addressable loop of instruments supporting the Dozor-07a protocol

IPP-07ea-330-1
Explosion-Proof Addressable Flame Fire Detector Gelios - 3 IK
Multirange flame detector for detection of ignition of various substances based on electromagnetic radiation of flame in IR band (three infrared sensors are available). The detector is designed for application only as part of addressable loop of instruments supporting the Dozor-07a protocol

IPP-07ea-329/330-1
Explosion-proof addressable flame fire detector Gelios - IK/UF
Multirange flame detector for detection of ignition of various substances based on electromagnetic radiation of flame in UV and IR bands (ultraviolet and infrared sensors are available). The detector is designed for application only as part of addressable loop of instruments supporting the Dozor-07a protocol

ADDRESSABLE EQUIPMENT:

EKRAN-a (KKV)
Explosion-proof addressable fire annunciator
It is designed to be used as a light or light and acoustic means of notification and information indicator; it provides light or acoustic signal in explosive areas. It is designed for operation only as part of addressable loop of devices with support of Dozor-07a protocol



EKRAN-INFO-RGB-a
Multi-Color Explosion-Proof Addressable Fire Annunciator

The annunciator is designed to be used in explosive environments as a light, acoustic or combined means of notification, information indicator and panel; it provides signals in fire and security alarm systems operating in combination with FACP Dozor-1A via the Dozor-07a protocol.

The annunciator can be used for indication of equipment operation modes and for alerting the personnel in case of emergencies or other situations. It can be used as an all-purpose illuminated information panel with capability of remote control. The annunciator provides multi-colored imaging (7 colors) - red, pink, yellow, green, sky-blue, blue, white

VS-07e-a-Ex-Z
Explosion-proof acoustic addressable fire annunciator (siren)
The annunciator is designed for generation of acoustic signals in fire and security alarm systems, in joint operation with any fire alarm control units.

The annunciator is designed for operation only as part of addressable loop of devices with support of the Dozor-07a protocol.

VS-07e-a-Ex-ZI
Explosion-proof acoustic addressable fire annunciator with indication
It is designed for generation of acoustic signals with indication (light and acoustic) in fire and security alarm systems, in joint operation with any fire alarm control units. The annunciator is designed for operation only as part of addressable loop of devices with support of the Dozor-07a protocol.

KKV-07e-Ex-A-R1-U/P/T/K
R1 frame size explosion-proof aluminum switch-box with a transition board for installation of address marks.
The explosion-proof boxes KKV-07e-A with transition board is designed for installation of address marks as well as for connection and branching of general and special purpose electrical circuits (control and power cables of automatic and telemechanics systems, control and alarm circuits, etc.) in explosive areas.

DIALOG-PRO

DIALOG PRO is a hardware-software complex with a combinable design based on analog-addressable explosion-proof detectors and programmable controllers.

The hardware and software suite for automatic fire suppression Dialog Pro is designed for fire alarm system control and gas hazard monitoring, control of pumping modules and check valves of water-based, foam and subsurface fire-extinguishing systems, solenoid operated valves of gaseous fire suppression systems, aerosol and dry chemical fire suppression pyrotechnic squibs, control of alarm and warning means at technological facilities for oil and gas extraction, processing and transportation in all climatic zones of the Customs Union.

HSS AFS Dialog Pro is a design-composable distributed system with variable composition of functional devices: attendant workstations with SCADA system, elements, programmable industrial controllers, network equipment, fire detectors and control and measurement instrumentation.

SCOPE OF APPLICATION:

- Oil extraction and processing
- Oil transportation
- Oil storage and handling
- Gas extraction and processing
- Gas transportation
- Gas distribution
- Petrochemistry

MAJOR CUSTOMERS:

FIRE EXTINGUISHMENT TECHNIQUES:

- Water-based
- Foam (including subsurface suppression)
- Dry chemical
- Gaseous
- Aerosol

STANDARD ASSETS TO BE PROTECTED:

- Well clusters
- Booster compression station, preliminary water discharge, oil treatment plant, central processing facility and packaged well pad pump station units
- Tank farms
- Oil and gas metering units
- Gas distribution plants
- Transformer substations
- Administrative and amenity buildings
- Motor fuel production plants

SYSTEM PLATFORMS:

- Schneider Electric (Modicon, SCADAPack)
- Siemens (S7-1200, S7-1500, S7-400)
- Rockwell (Control Logix, Compact Logix)
- Yokogawa (Stardom)
- Beckhoff (P205, Bc9100)
- Dolomant (Fastwel I/O)
- Prosoft (REGUL R200, R400, R500)
- Emikon (DCS 2000)
- Tersi-KB (BCE-5-3)
- Promavtomatika (TK-166M2)
- NITA (PKP-1A-1, PKP-1A-5)

DESIGN-INHERENT SOLUTIONS:

- Design configuration based on order sheet agreed with the customer
- Free choice of PLC and SCADA system
- Explosion-proof detectors, annunciators and gas sensors within addressable-analog loop
- Distributed structure on the basis of ring fiber-optic communication line
- High level of reliability thanks to SCADA systems, PLC, ring fiber-optic communication lines, fire loops and UPS redundancy
- High integrated information security
- Integratability with PCS and CCTV systems
- Possibility to carry out remote diagnostics via WEB access
- Full compliance with the requirements of GOST 53325-2012 Section 7

FUNCTIONS:

- Fire detector signal processing
- Gas sensor signal processing
- Alarm with indication of alarm generation source
- Automated equipment control
- Automated ventilation system control
- Loop and equipment visualization
- Control of visual and acoustic notification means
- Information registration and backup
- Data exchange with interfacing systems.

PARAMETERS AND FEATURES:

Name of parameter (feature)	Value of parameter (feature)1002010 km60 s20 years
Maximum number of monitored fire loop, min.	100
Maximum number of areas to be protected, min.	20
Length of ring fibre-optic communication line, min.	10 km
Uptime after powering up, max.	60 s
Rated service life	20 years

COMPOSITION:

- Top level
  - Operator WS (principal, auxiliary)
  - I/O server (principal, auxiliary)
- Middle level
  - PLC cabinet with operator panel
- Low level
  - Detectors, annunciators and control and measurement instrumentation

SOFTWARE:

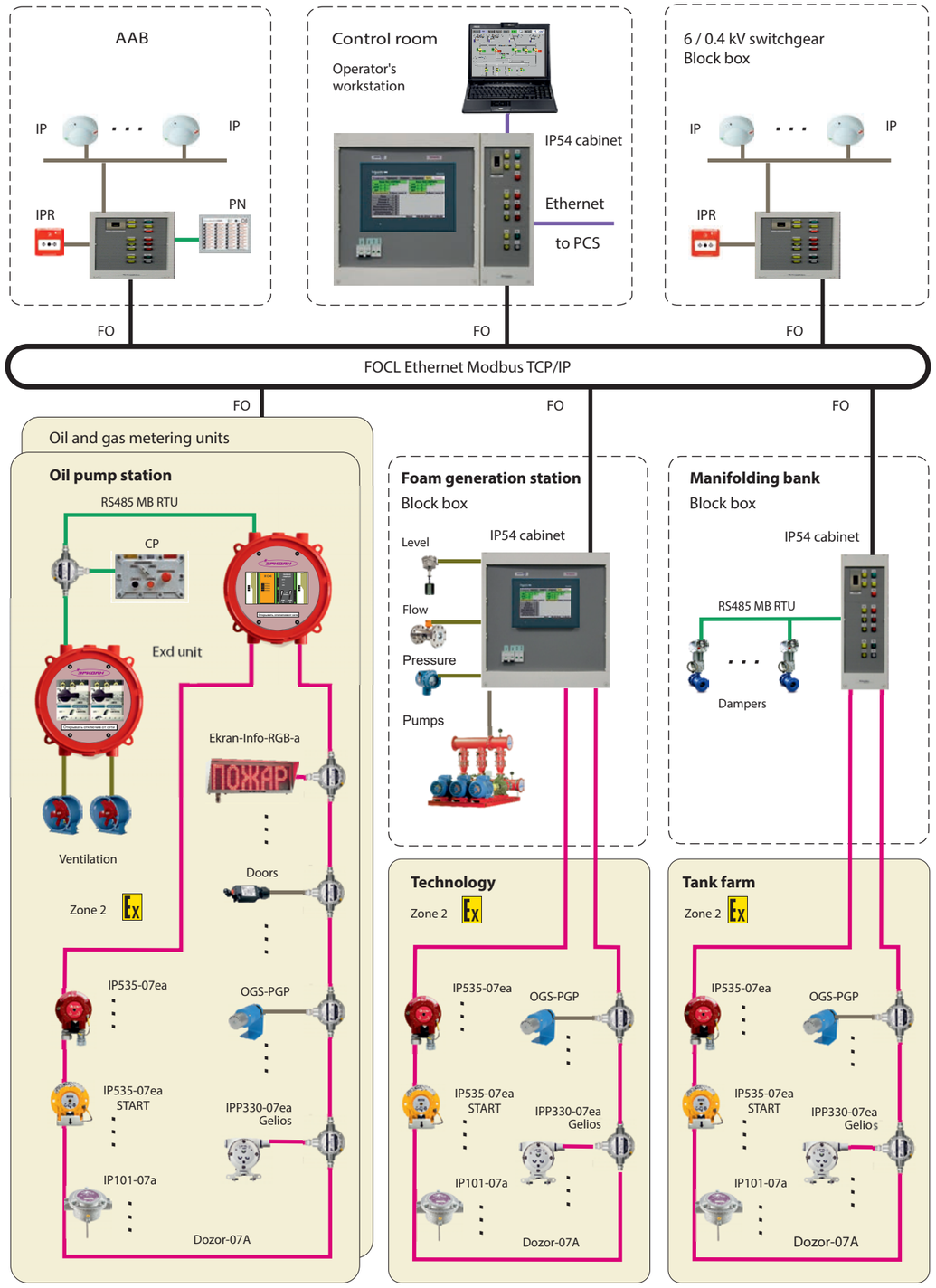
Software tools:

- IEC 61131-3 programming languages
- Predefined standard algorithm libraries
- SCADA systems In Touch, WinCC, Master SCADA
- Web access for diagnostics and maintenance

Application software:

- Intuitive interface
- Impediment to incorrect input
- User-friendly event visualization
- Maintenance of several message archives
- Breakdown of personnel into groups
- Remote diagnostics

FUNCTIONAL CHART



* Composition of a particular HSS AFS Dialog Pro is defined on the basis of a configuration data sheet approved by the customer and design documentation specifications.

DISTINGUISHING FEATURES AND ADVANTAGES:

- High reliability
- Optimal cost of the equipment
- Import-substituting solutions
- Selection from 11 modern platforms
- Full compliance with the requirements of GOST 53325
- Minimum delivery timeframes
- Minimum project design work timeframes and manpower input thanks to the use of a set of standard design solution documentation
- Minimum application software development timeframes and manpower input thanks to the use of predefined standard algorithm libraries
- Minimum erection work timeframes and manpower input thanks to the use of distributed structure on the basis of ring fiber-optic communication line, addressable-analogue loops of fire detectors and installation kits
- Minimum operating expenses thanks to advanced diagnostics and maintenance means including those provided via Internet access.

AVAILABLE ADDITIONAL SERVICES:

- Pre-project inspection of the facility and determination (jointly with the Customer) of the equipment range
- Coordination of HSS AFS Dialog Pro configuration data sheets with the Customer
- Budget estimate of HSS AFS Dialog Pro cost and determination of work completion stages
- Development of project documents for the facility general design contractor on subcontract basis
- HSS AFS Dialog Pro package supply
- HSS AFS Dialog Pro erection supervision and pre-commissioning activities
- Re-engineering of HSS AFS Dialog Pro based on the test results
- Customer's attending personnel training
- HSS AFS Dialog Pro maintenance and development

SUPPLY PACKAGE

This section comprises components designed for a more user-friendly, effective and safe operation of devices developed and manufactured by Eridan JSC. These are switching equipment, fittings, protective devices against weather conditions, etc.

They may be used at chemical, oil and gas production, oil and gas processing and other plants with explosion hazardous areas.

Cable glands

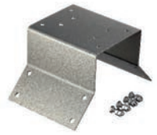
Cable glands of various modifications are designed for electric cable (including armored cables) entry (transit) into explosion-proof enclosure of devices manufactured by Eridan JSC. These cable glands are not independent explosion-proof devices and they are certified as in combination with other products.
Installed cable glands with sealing rings provide device explosion-proofness type 'Ex d', explosion-proofness level 1 and minimum ingress protection rating IP66.
Depending on the material of sealing rings, cable glands may be designed for operation at ambient temperatures of -70/-60...130°C, -60...200°C. Materials for cable glands are galvanized structural steel and stainless corrosion-resistant steel.
All input devices have zinc lamellar coating that provides following properties:

- excellent cathodic anticorrosion protection
- prevention of hydrogen embrittlement
- high resistance to chemicals, etc.

KVO10		Cable gland for surface laying of cable with outer diameter of up to 10 mm
KVO14		Cable gland for surface laying of cable with outer diameter of up to 14 mm
ShT1/2		Pipe union for pipe arrangement with the thread G ½"
ShT3/4		Pipe union for pipe arrangement with the thread G ¾"
ShT1		Pipe union for pipe arrangement with the thread G1"
ShT20		Pipe union for pipe arrangement with the thread M20x1,5
ShT25		Pipe union for pipe arrangement with the thread M25x1,5

KVB12		Cable gland for armored cable with max. armor diameter 12 mm with single seal along the cable wrapping
KVB17 PATENTED		Cable gland for armored cable with max. armor diameter 17 mm with single seal along the cable wrapping
KVM15		Cable gland for cable installation in the metal hose, internal diameter D=15 mm
KVM20		Cable gland for cable installation in the metal hose, internal diameter D=20 mm
KVBU14		Cable gland for armored cable with outer diameter 10-14 mm with double seal along the cable external insulation and cable wrapping
KVBU18		Cable gland for armored cable with outer diameter 14-18 mm with double seal along the cable external insulation and cable wrapping
KVBU22		Cable gland for armored cable with outer diameter 18-22 mm with double seal along the cable external insulation and cable wrapping
ZG		Terminal plug M20x1,5 mm
OE		Terminal element (ОЭ) is not a separate device; it is part of one of the option packs for explosion-proof fire detectors IP103-2/1-TR, IP101-07e and series IP101-07 and it is designed for continuous control of fire alarm loop integrity (it is installed in the last detector of the loop)
KVP12		General purpose industrial version plastic cable gland for surface cable laying, D=6-12 mm (IP67, -60...100°C)

Accessories

KIPT		Bracket for IP103 and IP101-07 series heat detector body mounting
KCHE		Attachment bracket for I2 external sensing element of IP101-07 series heat detector
SZK IP535		Sunshade visor for IP535 series call points
Removable element		For fixation of the protective element of IP535
KU		Long bracket (L=0.2 m) for installation of Gelios series flame detectors and VS series annunciators
SZK EKRAN		Sunshade visor for Ekran annunciators
AK-S		Adapter for mounting on a post for GRV annunciators and TVK series thermohousings
AK-U		Adapter for angle mounting for GRV annunciators and TVK series thermohousings
SZK TVK-A		Sunshade visor for TVK-A thermohousing

SZK TVK		Sunshade visor for TVK series thermohousings
BZP		Protective pneumatic lens hood for TVK series thermohousings
PS TVK		Safety appliance for TVK series thermohousings
SZK TOR		Sunshade visor for Pan/tilt TOR system
PKP-TOR-100		Mounting stand for Pan/tilt TOR system
UKN-TOR-100		Wall mounting attachment for Pan/tilt TOR system
PKP-TOR-200		Mounting stand for Pan/tilt TOR system in case of fitting with Duplex cleaning system
Chassis MK-07e-SH190AS		For installation in 19 modules of MK-07e-22EXX media converters
MK-07e-BP		Power supply unit for MK-07e-23EXX

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