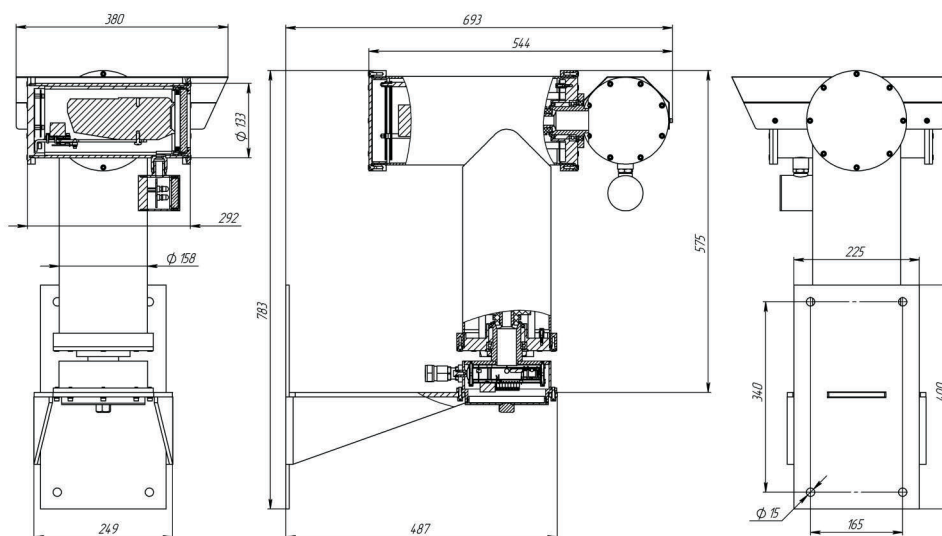# VIDEO SURVEILLANCE

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.
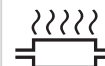

DIMENSIONS

| 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:

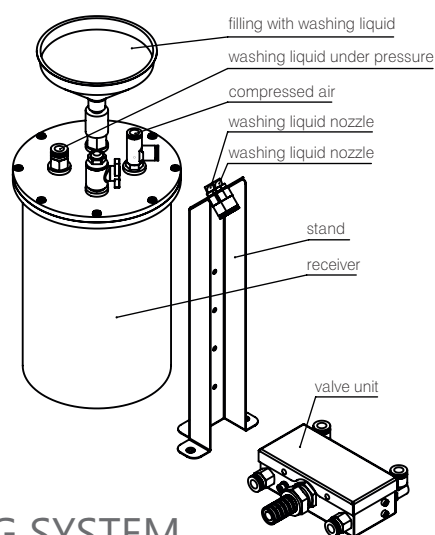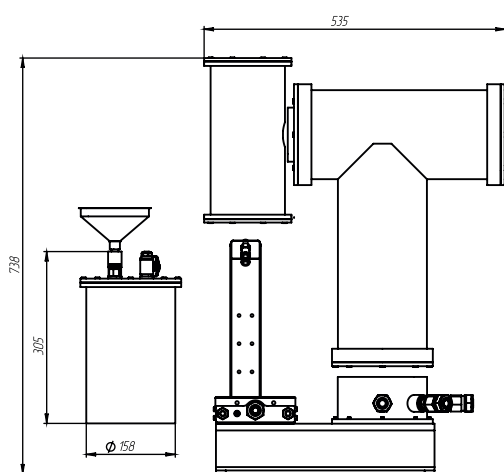|		
Enclosure explosion proofness marking	Ex tb IIIC T80°C Db X 1Ex d IIC T6 Gb X / 1Ex d e IIC T6 Gb X PB Ex d I Mb X	
Ingress protection rating	IP66/IP68	
Operating temperature range, °C	Nf1: -60...50 NF4: 1...50	
Supply voltage, V	230 VAC There is a voltage converter that provides 12V power feed for 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	

VIDEO SURVEILLANCE

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

535

738

305

Ø 158

- filling with washing liquid
- washing liquid under pressure
- compressed air
- washing liquid nozzle
- washing liquid nozzle
- stand
- receiver
- valve unit

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

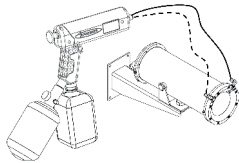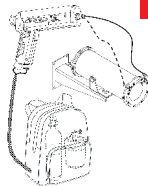IP66   -30°+50°C   0,6 MPa   30 m   Step 1   Step 2   10 years   3 years

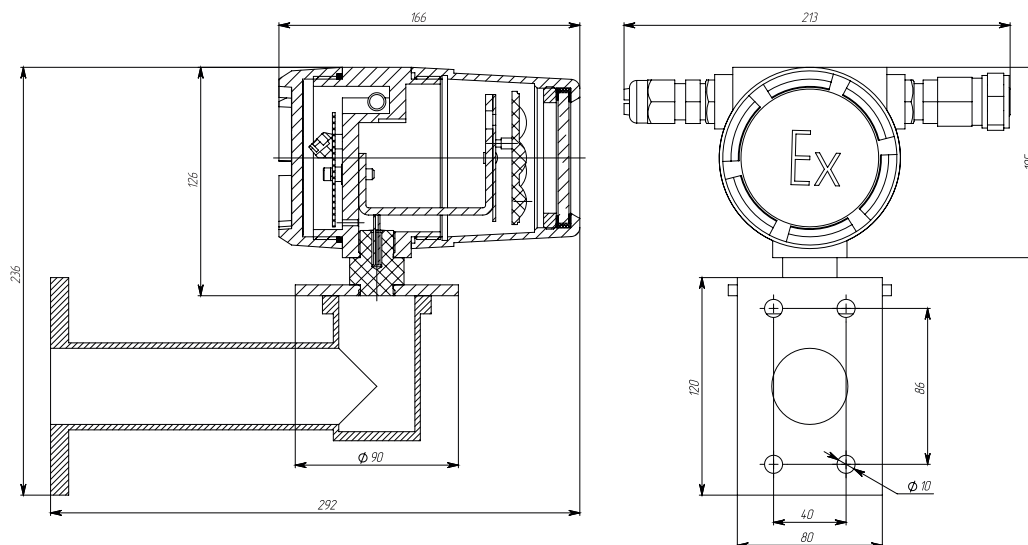|	Duplex-07e-Ex-TOR Explosion-proof glass cleaning system for pan/tilt system TOR-07e-Ex	Portable Duplex-07e-Ex-TVK Explosion-proof glass cleaning system for the TVK-07-S/N series thermohousings	Extended capacity portable Duplex-07e-Ex-TVK Explosion-proof glass cleaning system for the TVK-07-S/N series thermohousings
Modification		**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: c≥tric 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.
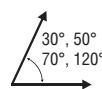

DIMENSIONS

| 1ExdIIC T6 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	