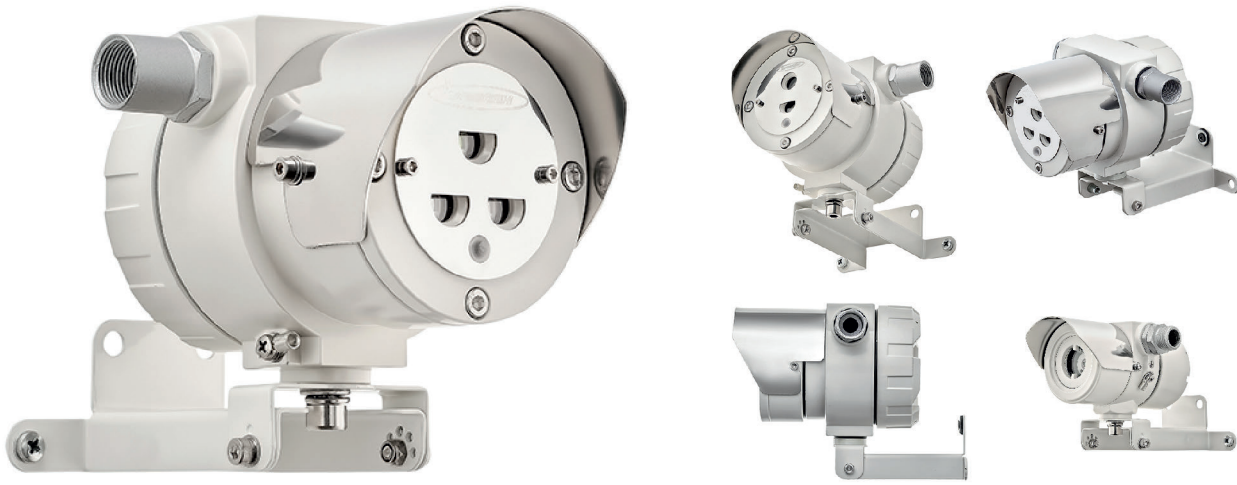# DETECTORS

## 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.
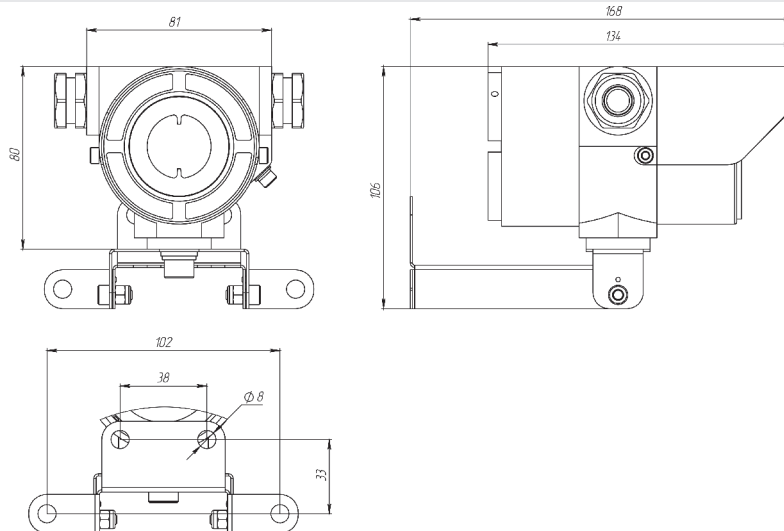


## SIZES AND MODIFICATIONS:

**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
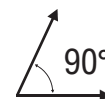


| 1Ex d IIC T6 Gb | IP66/ IP67 | -60°+55°C | 2 IR | 3 IR | IR/UV | Modbus RTU | 90° | Aluminum | 5 years |

## 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
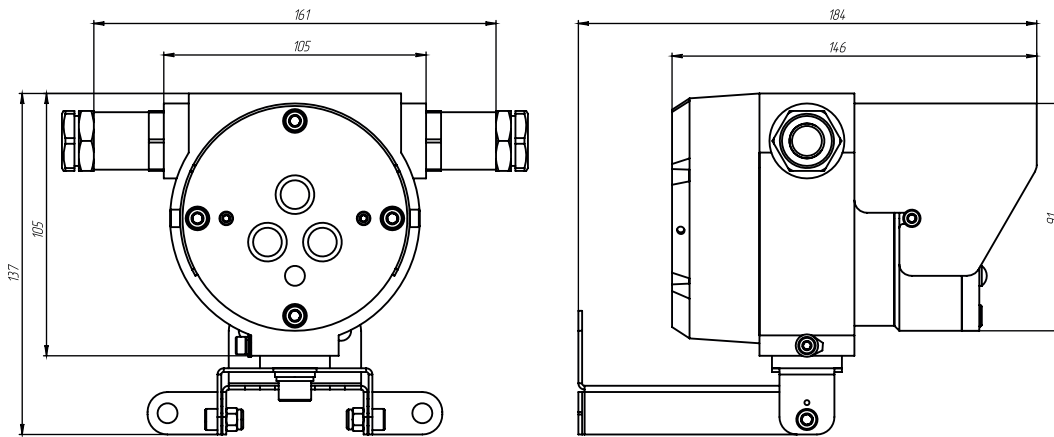
**IPP-07ea-329/330-1**
Explosion-proof addressable
flame fire detector Gelios - IK/UF

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
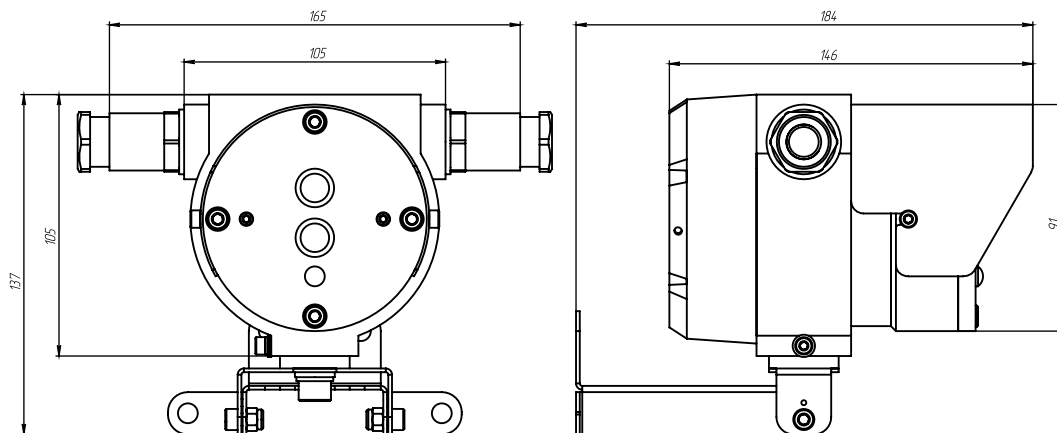
## TECHNICAL DATA:

| Modification | IPP-07e-330-1/2 (I1, I2, I3)<br>Explosion-Proof 2 IR<br>Flame Fire Detector | | IPP-07ea-330-1<br>Explosion-Proof Addressable 3 IR<br>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<br>In activation mode - 0.25 | | From addressable loop - 2.0<br>From external power supply source - 20<br>From external power supply source<br>with the heating on - 200 | |
| Supply voltage, V | 8...28 | | 15...39<br>(remains operational at 8...28) | |
| Viewing angle, min., ° | 70 | | 90 | |
| Activation range<br>in case the source is deflected<br>from the optical axis | | | Deflection angle, deg. | Stable activation<br>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<br>window glass contamination | Yes | | Yes | |
| Functionality without false alerts<br>with max. background illumination, lx | From fluorescent light sources - 2,500<br>From incandescent lamps - 250<br>Direct sun illumination - I1, I3 - 2,500; I2 - 70,000 | | From fluorescent light sources - 6,500<br>From incandescent lamps - 2,500<br>Visible light spectrum - 80,000 | |
| Possibility of connection<br>to addressable loop | Yes (by means of setting the address marks) | | Yes (via the Dozor-07a protocol)<br>Maximum number of addressable<br>devices to be connected: 255 | |
| Supported protocol | | | Dozor-07a | |
| Max. overall dimensions<br>(without cable glands and bracket), mm | 87*81*144 | | 146*105*110 | |
| Enclosure material | Aluminum alloy АК 12 ПЧ | | Aluminum alloy АК 12 ПЧ | |
| Light indication | Yes | | Yes | |
| Number of cable glands<br>in the enclosure | 2 | | 2 | |
| Cable entry diameter, mm | 6...12 (into equipment casing)<br>up to 22 (along the external insulation) | | 6...12 (into equipment casing)<br>up to 22 (along the external insulation) | |
| Detector installation mode | Bracket (included in the supply package),<br>long bracket (optional) | | Bracket (included in the supply package),<br>long bracket (optional) | |
| Available packages | Input devices, long bracker (optional),<br>test lantern (optional) | | Input devices, long bracker (optional),<br>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 |
|---|---|---|
| IGC / TP | IGC | IGC |
| 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, % | Deflection angle, deg. | Stable activation distance, % | Deflection angle, deg. | Stable activation distance, % |
|---|---|---|---|---|---|
| 0 | 100 | 0 | 100 | 0 | 100 |
| ±15 | 96 | ±15 | 96 | ±15 | 96 |
| ±30 | 86 | ±30 | 86 | ±30 | 86 |
| ±45 | 71 | ±45 | 71 | ±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 |