

1 General Information

«IPP-3IR-Ex» infrared flame detector (hereinafter, IPP-Ex) refers to intrinsically safe electric devices with «ia» level «intrinsically safe electric circuit» explosion protection. IPP-Ex is designed for detecting ignitions accompanied by open flame with subsequent transmission of an alarm message to a BRSS-Ex zone extension module (hereinafter, BRSS-Ex).

2 Features of the Detector

- IPP-Ex executes three spectral lines analyses in IR-range providing fast and reliable fire detection and high-level interference protection;
- Self-test system of internal circuitry automatically monitors the IPP-Ex;
- Sensitivity adjustment (3 levels) for different exploitation conditions;
- Case is combined with electric junction box.

3 Specifications

IPP-Ex has explosion proof labeling 0ExialICT6. IPP-Ex intrinsically safe electric circuits have the following valid parameters:

- maximum input voltage of power-supply circuit (U_i) – 16 V;
- maximum input current (I_i) – 150 mA;
- maximum internal capacitance (C_i) – 1000 pF;
- maximum internal inductivity (L_i) – 0.01 mH.

Maximum value of background illumination, at which IPP-Ex remains available and does not generate false alarm messages, maximum:

- created by fluorescent lamps – 2 500 lx;
- created by incandescent lamps – 250 lx.

IPP-Ex identifies it's state by means of closing/opening of «Alarm» loop (AL) contacts and «Failure» loop (FL) contacts and by LED indication.

IPP-Ex generates messages, listed in Table 1.

Table 1

Message	IPP-Ex state / Contacts Position	LED indication Mode
Warm-up Time	Technical availability at adjusted sensitivity	LED indicators are continuously lighting, on expiry of 5 sec they produce a series of blinks in correspondence to adjusted sensitivity (see Table 2) and after it LEDs proceed lighting until the end of the warm-up time period
Norm	FL contacts closed	LED periodical blinking with 5 sec interval
Fire Alarm	AL contacts closed	LED continuous lighting until IPP-Ex reset
Failure Alarm	FL contacts opened	LED periodical blinking with 1 sec interval until failure correction

IPP-Ex ensures safe operation under the influence of:

- sinusoidal vibration with acceleration 0.5 g within the frequency range 10 ... 150 Hz;
- straight mechanical blow delivered with energy 1.9 J;
- nanosecond pulse interference, electrostatic discharges and radio-frequency electromagnetic fields.

Table 2

Parameter	Value
Supply circuit nominal voltage, U_{nom}	12 V
Current consumption, not more than	20 mA (+100 mA for heater)
Warm-up time	60 sec
Detection range	40 m
Actuation time, not more than	30 sec
Detection angle	80°
Operating temperature: - without heating - with heating	from minus 30° to +55 °C from minus 50° to +55 °C
Permissible relative air humidity at a temperature +25 °C	up to 98 %
Dimensions, maximum	170 x 150 x 150 mm
Weight of the Detector, maximum	0.9 kg
IP rating	IP65
Average time-to-failure, not less than	60 000 h
Average service life, not less than	10 years

4 Detection Zone Pattern

Detection zone pattern is shown in Figure 1.

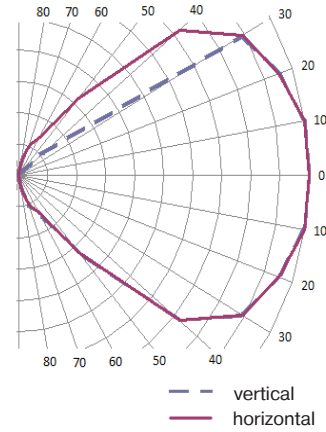


Figure 1

5 Sensitivity Level Indication

Table 3

Sensitivity level	R	LED indication
High	< 1 kΩ	3 blinks
Medium	10 – 20 kΩ	2 blinks
Low	>100 kΩ	1 blink

6 Scope of Delivery

Each IPP-Ex unit package contains the items listed in Table 4.

Table 4

Name	QNT
«IPP-3IR-Ex» infrared flame detector	1 pc.
Key	1 pc.
Screw 3-3x30.016	2 pcs.
Nylon screw plug «SORMAT» NAT 5x25	2 pcs.
«IPP-3IR-Ex» infrared flame detector. Installation Guide	1 copy

7 Installation and Switching On

If it is possible to install IPP-Ex in a place, where influence of the modulated IR-emission of the following sources is absent:

- straight and reflected sunlight;
- incandescent bus;
- items heated over 300 °C.

Mark out fixing places using mounting holes in the IPP-Ex electric junction box as a template or use sizes shown in Figure 2. Drill holes with diameter 5.5 mm and depth 30 – 40 mm. Install wall nuts into prepared holes and fasten the case by means of screws.

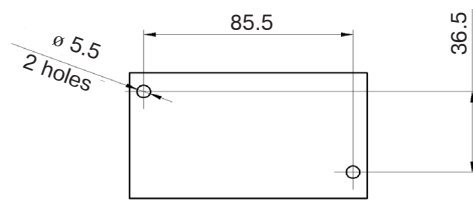


Figure 2

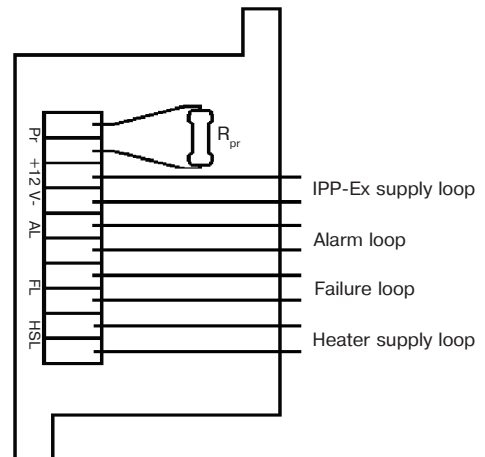


Figure 3

Hook up IPP-Ex to control panel loops in accordance with the pattern (see Figure 3).

Adjust the necessary sensitivity level (see Table 3).

Align the detection zone orientation by means of choosing IPP-Ex position on the swivel bracket. Fix chosen position by swivel bracket screw tightening.

8 Storage and Transportation

The IPP-Ex in original package may be transported by any means of transportation in closed vehicles over any distances in compliance with the existing shipping rules concerning the respective means of transportation.

Storage conditions of the IPP-Ex: storage premises should not contain any current-conducting dust, acid and alkali fumes, as well as corrosive gases or those destroying insulation.

9 Manufacturer's Guarantees

9.1 The manufacturer guarantees conformity of IPP-Ex to the Technical Specifications requirements provided the transportation, storage, installation and operation conditions are observed.

9.2 The guaranteed shelf life of IPP-Ex is 24 months since the date of manufacture.

9.3 The guaranteed service life is 18 months since the day of putting into operation within the guaranteed shelf life.

9.4 The IPP-Ex that are found non-conforming to the Technical Specifications requirements shall be repaired by the manufacturer, provided the installation and operation rules have been complied with.

10 Acceptance and Packing Certificate

«IPP-3IR-Ex» infrared flame detector,

batch number _____,

has been manufactured in compliance with the active technical documentation, classified as fit for operation and packed by «RIELTA» JSC.

Person in charge of acceptance and packing

QC representative _____
day, year, month