FIRE ALARM SYSTEM AND ITS NECESSITY

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Security and fire alarm systems must be installed without fail at any enterprise and in any organization, regardless of what type of activity the enterprise is engaged in. After all, the installation of this system is the basis of business security.

The security and fire alarm system combines two different functions. First, we are talking about detecting a fire with the subsequent possibility of extinguishing it in automatic mode, and secondly, about protection against unauthorized entry into the territory of the organizationй.

The security and fire alarm system includes a number of components: a control panel (a computer with special software), a number of reception and control devices, sensor devices, actuators and, finally, warning devices.

The installation of a fire alarm system is due to both the owner's concern for the safety of people and the safety of property, and regulatory acts. The alarm system detects a fire at the initial stage and notifies rapid response teams or the owner of the object in a timely manner. The technical system consists of the following components:

* The key element of the fire alarm system is the reception and control security and fire Alarm Device (PPKOP). Performs reception and processing of signals from various types of sensors, and together with the communication device, or independently, transmits information to the centralized monitoring station (PCN).

* Communication device. It is necessary for transmitting information to the control center via various communication channels: GSM network, radio channel, telephone line, etc.

* Different types of sensors: heat or smoke, combined, flame sensors

* Fire alarm control devices

* Various fire warning devices: light, sound

Types of detectors used

Detectorsthat are part of the security and fire alarm system are different.

According to the type of controlled physical parameter извещатели, security alarm detectors are divided into magnetocontact, infrared, извещателиglass break detectors, etc. [1, p. 29]. The task извещателейof fire alarm detectors is to detect the source of fire in a timely manner. The following types of fire detectors can be distinguished:

- Smoke detectors**,** that register air parameters via optical tracking
- ИзвещателиFlame detectors**,** that respond instantly to the appearance of an open flame
- Thermal detectors**,** based on ambient temperature analysis
- Maximum-differential thermal detectorsthat respond to the rate of increase in ambient temperature
- Combined detectors**,** that combine the properties of several types of fire detectors.

The functions of receiving and monitoring equipment of security and fire alarm systems are feeding security and fire detectors along the OPS loops; receiving and generating alarm notifications; transmitting messages to a centralized monitoring station, as well as generating alarms for triggering other systems[2, p.57].

In the security and fire alarm извещателейsystem, various types of reception and control equipment can be used to receive and process information received from detectors: reception and control devices, control panels, central stations.

Reception and control equipment differs primarily in information capacity – that is, the number of controlled loops of security and fire alarm systems, as well as the level of development of warning and control functions. Control equipment can be designed for small, medium or large objects. In most cases, non-address systems are installed on small objects (no more than 30-40 rooms); addressable or addressable analog alarms are installed on medium and large objects.

A design feature of addressable and addressable analog systems is the use of a ring alarm loop. It has increased security against disruption of communication lines with detectors. For various manufacturers, the ring loop of monitoring equipment is usually compatible with the detector models produced by this companyизвещателей, and some panels support different versions of the ring loop topology. The use of such equipment can significantly facilitate the design of security and fire alarmsystems[3, p. 88].

All security and fire alarm devices must be provided with uninterrupted power supply. As the main one, as a rule, the network power supply of security and fire alarm control panels is used, while the remaining devices are powered from low-voltage secondary DC sources or from a security and fire alarm loop. In accordance with domestic fire safety standards, the security and fire alarm system must function smoothly in the event of a loss of mains power at the facility during the day in standby mode and at least 3 hours in alarm mode. To meet this requirement, the security and fire alarm system must use a backup power supply system — additional sources or built-in rechargeable batteries.

State-of-the-art automatic fire alarm and fire extinguishing system integrated into the automated dispatching and building management system is capable of monitoring and alerting via cellular communication or the Internet. Properly designed and built, such a system is able to effectively fight fire and smoke, eliminate the source of ignition even before the arrival of firefighters[4, p. 103]. APS (automatic fire alarm system) is able to quickly find the source of ignition and neutralize it. This system is designed for instant actions.

In the event of a fire hazard, it will:

- notifies employees.
- gives a signal to all the building's automatic systems.
- blocks elevators.
- turns on the fire extinguishing system.

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