

Alert system

The system alerts is a wireless alarm system that, in its basic configuration, consists of three monitoring panels and up to forty boxes. More complex systems could be formed by combining a number of basic configurations.

Monitor panels are located in control rooms, have 80 LEDs, connected to power supply and to a PC. On the monitor module, there are two types of LEDs: yellow - to indicate the presence of the alert box, and red - for alarm. Monitor module consists of a microprocessor controller which controls the operation of these diodes and communicates with the PC, ZigBee module and power supply.

Signal boxes are associated to workplaces (numbered from 1 up to 40) and connected to power supply. They have 3 switches, one for each type of alarm. LEDs are assigned to switches, and they visually present selection of switches state. When a switch is turned on, LED is on, otherwise it is turned off. When there is a need for reporting, the worker turns on an appropriate switch, which causes appropriate monitor panel turns red LED on which corresponds to alert box that generated the alarm.

Each monitor module is set to display only one of three possible types of alarm.

For wireless communication are used modules based on ZigBee standard, a communication range of system is determined by the physical layout of alert boxes and configuration of space that should be covered by the system. Indoor range could be up to 90m.

Monitor panel connects to a PC through USB connection. We have developed a special program for receiving and processing incoming alarms. It records the history of the malfunctions, from which workplace comes the alert, as well as the all relevant information about action taken after notification. Based on this, it is possible to make a graphical and statistical reports, and keep accurate records of all events and interventions undertaken.

The system can be easily moved, reconfigured or expanded.

The Fig.1 and Fig.2 show the alert box and monitor panel, for a specific application (reports of failure in the workplace in an industrial facility). Fig. 3-6 shows some typical screen shots of the software package for receiving and processing incoming alarms.



Fig 1. Alert box



Fig 2. Monitor panel

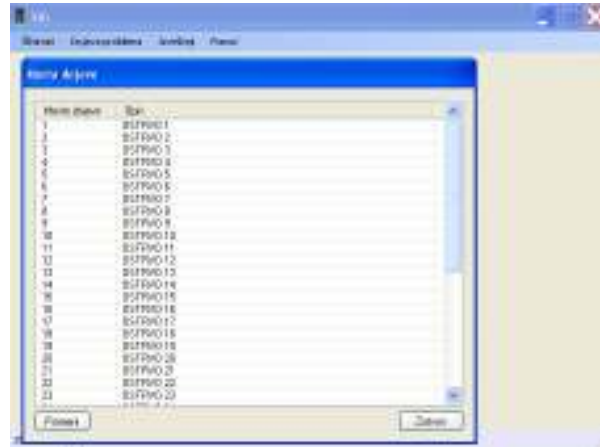


Fig 3. Display application on the PC for processing reports – Workplace alert



Fig 4. Malfunctions alert



Fig 5. Events

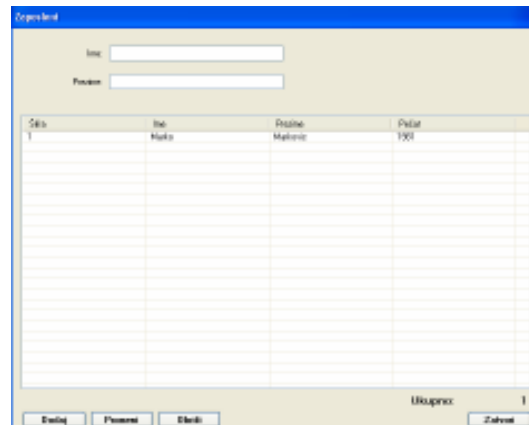


Fig 6. Working staff