IGNIS 1520M AUTOMATIC FIRE EXTINGUISHING SYSTEM CONTROLLER

Overview

The IGNIS 1520M automatic fire extinguishing controller is designed to detect a fire and control the regular fire extinguishing equipment containing gaseous, liquid or aerosol extinguishing agents as well as to monitor the self-activating extinguishing process.
The controller works with the 40 and 30 model range conventional fire detectors and the specialized PU-61 and PW-61 push buttons, allowing for manual activation and disen-gagement of the fire extinguishing process. It also works with the SE-1, SW-1 acoustic and optical warning devices.
This controller is adapted to service one fire-extinguishing zone.

Functionality

After detecting a fire, the IGNIS 1520M controller can carry out the following:
- control the warning signal system with the option of programming of the evacuation period duration,
- programme the delay time of hermetically sealing off premises after releasing a fire extinguishing agent,
- control technological equipment,
- control fire separators (doors, windows, etc.),
- control technological ventilation or air-conditioners,
- control power supply,
- control technological devices,
- control fire walls (doors, windows etc.),
- control the fire extinguishing systems using outputs (with programmed operating time of electric impulses), intended for the activation of the electromagnetic valve and directional valve pertaining to gaseous extinguishing agent in a gaseous form or the water valve for water extinguishing equipment.

An automatic fire extinguishing process is initiated by:
- simultaneous activation of fire detectors located in two detecting lines, the operation of which includes the option of initial programming of preliminary reset of detectors,
- pressing the PU-61 push button (START OF FIRE EXTINGUISHING),
- pressing the START OF FIRE EXTINGUISHING push button located in the controller.

An activation of fire detectors in only one detecting line will be signalled by a controller as a fire alarm without activation of the fire extinguishing system.
An automatic fire extinguishing process takes place in two phases:
- a WARNING phase – intended for evacuating people from the fire extinguishing zone. The audible and optical signalisation will be switched on for a programmed period (from 0 to 10 minutes). During this time it is possible to abort the extinguishing process by pressing the BLOCKADE EXTINGUISHING button on the controller or by switching on the PW-61 button (STOP EXTINGUISHING) connected to the control panel,
- an EXTINGUISHING phase – designated for the fire extinguishing resulting from transmitting control signals from the panel to the electromagnetic coil opening the pilot cylinder with the extinguishing gas or electromagnetic actuator, which opens the water valve.

Input circuits

The following input circuits may be connected to the IGNIS 1520M controller:
- two detecting lines with fire detectors,
- a line for receiving the extinguishing process abort signal, generated by the (STOP EXTINGUISHING) PW-61 push buttons,
- an input line for monitoring pressure or mass of the extinguishing agent in cylinders,
- a receiving line of activation signal of the extinguishing agent release or for confirmation that the extinguishing system was activated,
- a receiving line of a signal from manually activated the PU-61 activation pushbuttons (START EXTINGUISHING),
- a receiving line for manual “ADDITION” release signal,
- a fire alarm transmission line from another external fire alarm system,
- an automatic control aborting line (leaving manual control release active),
- a receiving line for fault signals from interoperating devices.

All input lines are break and short-circuit controlled.

Output circuits

The IGNIS 1520M controller is equipped with the following outputs:
- an evacuation signal line with load capacity of 500 mA/24 V,
- a warning line with load capacity of 500 mA/24 V,
- 24 V power supply output for external devices, load capacity depending on time of operation of the reserve power supply and battery capacity.

- five relay outputs with non-potential contacts:
• pre-alarm level,
• fire alarm level,
• general fault,
• navigation of technological processes,
• navigation of hermetic devices of enclosure, programmed delay time programmed from 1 second up to 10 minutes,
- three monitored relay outputs 24 V:
• a control output of the electromagnetic valve, i.e. a valve of the cylinder with an option of programming the electric impulse duration from 1 second up to 30 minutes,
• a control output of the electromagnetic navigation with the option of programming electric impulse delay and duration from 1 second up to 30 minutes,
• control output of the electromagnetic valve, i.e. spare cylinders (moment of release controlled by an external „ADDITION" line) with the option of programming the operating time of electric impulse from 1 second up to 30 minutes,
- six outputs for transmitting basic information to the primary system, using non-potential relay contacts:
• pre-alarm ,
• fire alarm – „EXTINGUISHING" command ,
• fault,
• pressing the „ BLOCKADE EXTINGUISHING" button,
• fire extinguishing activation,
• regulation adjustment,
- external alarm signal devices control output,
- the RS 232 interface system output to PC in order to read memory of activities. The controller remembers 512 latest occurrences, the signal of which is emitted and actions related to its operation. It also has a built-in counter of fire alarms. Occurrences are ordered depending on the time they took place.-max. 9999 alarms.

Interoperating devices

In addition to fire detectors, the IGNIS 1520M controller can interoperate with the following equipment:
- the PU-61 button (START EXTINGUISHING), which enables manual activation of the fire extinguishing process by breaking the glass pane and pressing the alarm button; the buttons have yellow colour cases;
- the PW-61 pushbutton (STOP EXTINGUISHING) – designated to abort the automatic extinguishing program; the buttons have blue colour cases;
- the SW-1 and SE-1 acoustic and the optical warning devices, which warn any person/s in a given closed premises about an impending automatic activation of the fire extinguishing systems and the necessity to evacuate the premises, are installed either inside or outside the closed premises;
- the SA-K audible warning signalling devices, warning any person/s in a given closed premises about an impending automatic activation of the fire extinguishing systems, can be installed inside or outside of the extinguishing zone;

The above system set is supplemented with the following instruction signs:
- a 'WARNING' sign – placed inside and outside the extinguishing zone;
- 'START EXTINGUISHING' push button instructions – placed next to the PU-61 button;
- 'STOP push button instructions – placed next to the PW-61 button.

Design

The front of the cabinet has a door with signalling and regulating devices, separate pushbuttons – START EXTINGUISHING and BLOCKADE EXTINGUISHING, an LCD display and a lock with a key to select the second access level to reach additional functions of the control panel. Two screws need to be undone to open the door to the cabinet. At the back of the cabinet, there are cable conduits for installation wire routing. On the left wall of the panel housing there is the RS 232 recording interface system base covered by a conduit plug cap.

Technical specifications

Supply voltage	AC 230 V/50 Hz
Supply voltage of backup battery	2 batteries 2 x 12 V/6.5 - 7 Ah
Backup battery current consumption in quiescent mode	≤ 90 mA
Operation time with standby power supply from secondary battery	72 h
Max. output feeder cable current	3 A/24 V
Number of detector lines	2
Resistance of detector lines	2 x 120 Ω
End-of-line (EOL) resistor	5.6 kΩ 5 % 0.25 W
Allowable total quiescent current for fire detectors in detector line	max 2 mA
Electrical impulse to control the release	2 A/24 V
Operation temperature range	from -5 °C up to +40 °C
Panel base ingress protection	IP30
Mass (without batteries)	< 6 kg
Dimensions	314 x 368 x 106 mm
Compatibility with standard	PN-EN 12094-1

How to order

When placing an order, in addition to the name of control panel and detectors, depending on individual needs, please specify the necessary number of additional devices such as the PU-61, PW-61 push buttons, the SW-1, SE-1, and SA-K audible signalling devices and User Manuals to be included in the order.
Reserve batteries are not included in the IGNIS 1520M controller system set and need to be ordered separately.