



SYSTEM
OVERVIEW

COMPACT ADDRESSABLE FIRE ALARM SYSTEM

POLON 3000

COMPACT ADDRESSABLE FIRE ALARM SYSTEM



POLON 3000

Purpose

The addressable, compact POLON 3000 fire alarm system designed for detection and signaling the fire, notifying appropriate emergency services, and controlling fire protection devices.

It is dedicated to protect small and medium-sized buildings like hotels, schools, libraries, museums and other objects, where many addressable elements are not required.

A full communication is provided (using detection line) with other control panels, such as universal control panel (UCS 6000), fire extinguishing panel (IGNIS 2500), fire protection power supply (P2B 6000) or gas detection control panel (CDG 6000).

It perfectly fits the installations due to the possibility of sending a substantial amount of digital information to integration and supervision systems as well as to fire monitoring systems.

Genuine detection loops protocol allows reliable data exchange between appropriate control panels and line elements.

All line elements are equipped with built-in short-circuit isolators with the possibility of software activation on and off.

Soft-addressing for all loop devices is made by panel with proper PC software.

With the use of radio detectors and manual call points, POLON 3000 system can also be installed wherever it is not possible to use detection loops with wires.

Three versions of POLON 3000 control panel are available: POLON 3064, POLON 3128, POLON 3256, which delivers suitable fire protection of different size of the secured facilities.

Functionality

POLON 3000 control panels can create up to 16 zone groups and notify their status with LED indicators (information about alarm for a specific group of detection zones).

One of 13 alarm variants can be selected for each zone thus optimizes the use of fire detection system and allows to detect fire in specific, individual conditions.

With extensive software, the control panel enables construction of installation with a flexible physical and logical structure.

Various types of outputs in POLON 3000 control panel enable to control of signalling and fire protection devices.

Regardless, control operation possibilities are offered by new addressable input-output elements of the 3000 series.

There is also possibility of using already available elements of the series 6000 and 4000, installed on detection loops.

Fire protection equipment which is linked to panel can have its own user descriptions (in addressable versions).

USB, RS-485 and Ethernet communication ports allow connection the control panel to the computer digital monitoring system, integration and supervision system. Statuses of external devices or circuits can be supervised with input-output elements of the EKS-3000, 6000 series and 4000, installed on detection lines.

POLON 3000 logs up to 4000 events, that occurred during the supervision of the object. The event log can be displayed on the control panel's display or downloaded by computer application. Information is arranged by date and time of the event and can be saved or printed.

• ADDRESSABLE ELEMENTS POLON 3000



- ▶ DUO-3000 / DUO-3000AD with built-in siren*
Universal optical smoke detector with dual (IR+UV)
- DUT-3000AD with built-in siren*
Multi-sensor, multi state smoke and heat detector
- DOT-3000 Universal smoke and heat detector
- G-40 Detector base
- PG-40 Masking ring (for G-40)

*base G-40S as a kit



- ▶ DOP-3000 Addressable/conventional beam smoke detector
- E39-R8 Prismatic reflector for beam smoke detector (5 - 50 m)
- 4 x E39-R8 Set of reflectors for beam smoke detector (50 - 100 m)



- ▶ ACR-4001 Wireless detectors interface
- DUR-4047 Wireless optical smoke detector (base as a kit)
- ROP-4007 Wireless manual call point (flush mounting, indoor)
- ROP-4007H Wireless manual call point (flush mounting, outdoor)
- RM-60-R Assembling frame (for surface mounting)

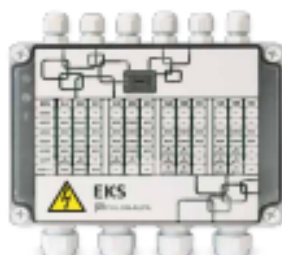


- ▶ ROP-3000 Manual call point (flush mounting, indoor)
- ROP-3000H Manual call point (flush mounting, outdoor)
- RM-60-R Assembling frame (for surface mounting)

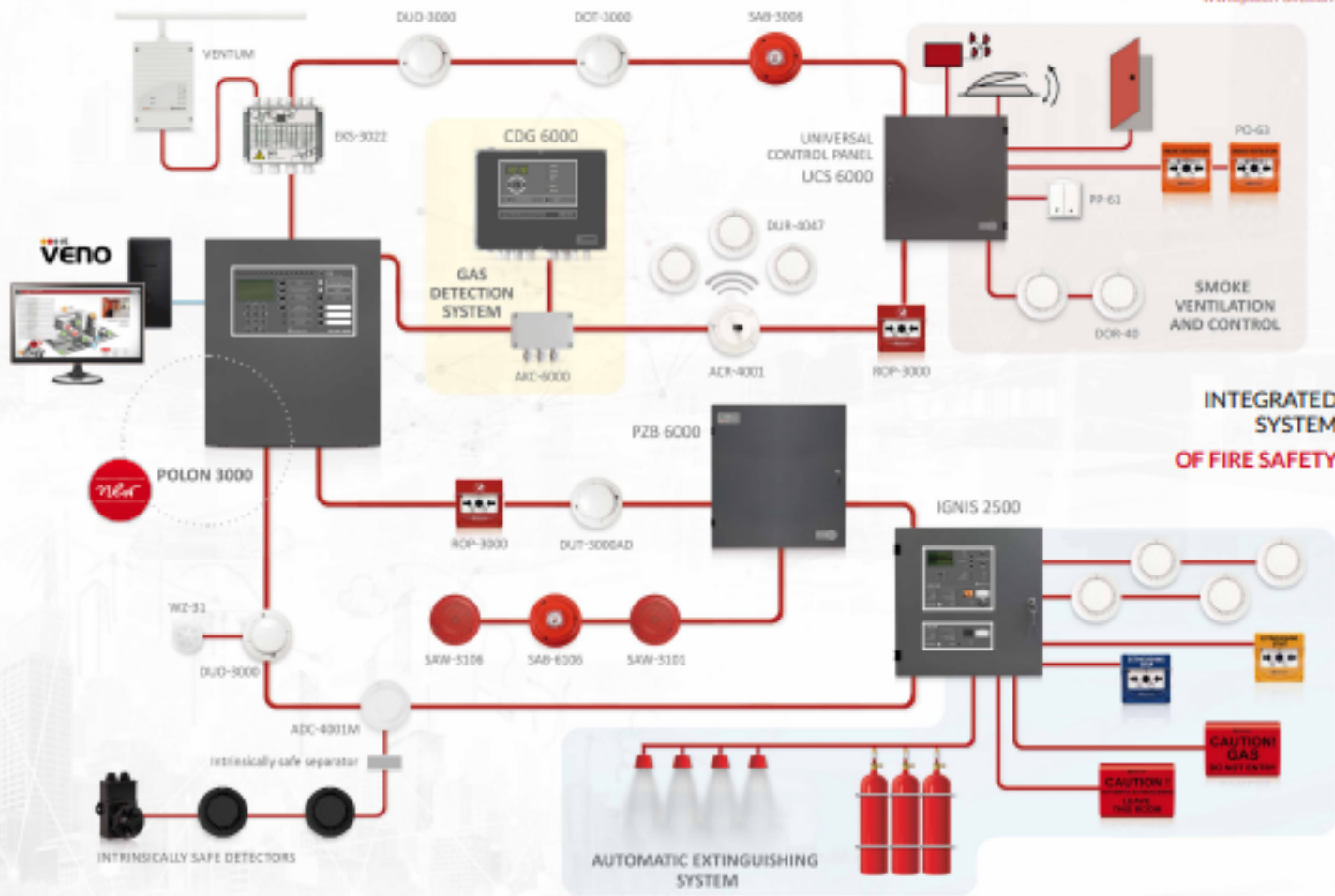


- ▶ SAW-300X Addressable siren with tones*
- SAB-300X Addressable acoustic sounder-beacon*

*base G-40S as a kit



- ▶ EKS-3022 I/O module EKS-6022 2 in / 2 out
- EKS-6222P I/O module EKS-6222P 2 out HV / 2 in HV / 2 in LV



INTEGRATED SYSTEM OF FIRE SAFETY

perfectly designed SAFETY

► POLON 3000
COMPACT ADDRESSABLE FIRE ALARM SYSTEM

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UCS 6000 UNIVERSAL CONTROL PANELS



- ▶ MGS-60 Main controller
- MGL-60(8A) Zone module
- MPW-60 High voltage I/O module (2 out, 2 in)
- MZU-60 Power supply supervising module
- MPD-60 Low voltage I/O module (2 out / 2 in)
- MKA-60 Addressable module for POLON 3000, POLON 4000 and POLON 6000 panels
- PO-63 Ventilation button (orange) flush mounting; 3 x LED + reset switch
- PO-62 Ventilation button (orange) flush mounting; 1 x LED + reset switch
- PO-61 Ventilation button (orange) flush mounting; 1 x LED
- RM-60-O Assembling frame (orange) for surface mounting
- PP-61 Daily ventilation button (flush mounting)
- PP-62 Daily ventilation button (surface mounting)

SDG 6000 GAS DETECTION SYSTEM



- ▶ CDG 6000 Gas detection control panel
- PSG-6001 CNG (natural gas)
- PSG-6002 LPG (propane-butane)
- PSG-6003 CO (carbon monoxide)
- PSG-6103 CO (carbon monoxide); loop powered
- AKC-6000 Digital interface
- TO-6000 Warning boards

PZB 6000 POWER SUPPLY UNITS



- ▶ PZB 6000 Fire approved power supply unit 2 A, 4 A, 8 A, 16 A, 24 V DC

EX DETECTORS



- ▶ DUR-40Ex Universal optical smoke detector, ATEX approved
- PUO-40Ex Flame detector (UV), ATEX approved
- TUN-38Ex Universal heat detector, ATEX approved (installation without base)
- PPW-40REx Fireproof triple IR flame detector

IGNIS 2500 CONVENTIONAL EXTINGUISHING SYSTEM



- ▶ **IGNIS 2500** Two zone extinguishing control panel
- PU-61** START button (yellow)
- PW-61** STOP button (blue)
- RM-60-Y** Assembling frame (yellow for START button - surface mounting)
- RM-60-B** Assembling frame (blue for STOP button - surface mounting)
- SG-1-1** Optical-acoustic indicator (application outside extinguishing area)
- SG-1-2** Optical-acoustic indicator (application inside extinguishing area)



- ▶ **DOR-40** Optical smoke detector
- DUR-40** Optical, universal smoke detector
- TUP-40** Rate-of-rise heat detector
- DOT-40** Smoke and heat detector
- TOP-40** Heat and flame detector
- G-40** Detector base
- P-40** Masking ring (for G-40)

OTHERS



- ▶ **TSG-60** GSM service transmitter
- VENO** Visualisation and integration system
- PA VENO** Certified system integrating fire protection devices for visualisation and control



Small and middle-sized objects



User friendly interface



Easy and fast configuration



Nonproblematic installation



Low cost of maintenance



Wide range of cooperated equipment

CONTROL PANEL VARIANTS **POLON 3000**

- **POLON 3064**
up to 64 addressable elements
- **POLON 3128**
up to 128 addressable elements
- **POLON 3256**
up to 256 addressable elements

No.	Element type	Working on the detection line		Description
		4000	6000	
1	DOP-6001	+	+	fire warning device
2	TUN-6046 TUN-6043	+	+	fire warning device
3	EKS-6000	-	+	input/output element
4	SAW-6001	+	+	tone sounder
5	SAW-6006	+	+	tone-voice sounder
6	SAB-6001	+	+	optical, tone sounder
7	SAB-6006	+	+	optical beacon, tone-to-voice
8	DUT-6046AD	+	+	fire warning device with acoustic sounder device
9	DUO-6046AD	+	+	fire warning device with acoustic sounder device
10	DOT-6046 DOT-6043	+	+	fire warning device
11	DUO-6046 DUO-6043	+	+	fire warning device
12	UCS 6000	+	+	universal control panel
13	AKC-6000	-	+	input/output device for addressable communication
14	Devices containing the MKA module: IGNIS 2500, PZB 6000 and CDG 6000, mCDG 6000 indirectly through AKC-6000	-	+	MKA - module for communication via the addressable line, compatible with 6000 protocol
15	DUT-6046	+	+	fire warning device

Line elements of series 4000 - compatible with **POLON 3000** control panel

No.	Element type	Working on the detection line		Description
		4000	6000	
1	DOR-4046	+	+*	fire warning device
2	DIO-4046	+	+*	fire warning device
3	TUN-4046	+	+*	fire warning device
4	DPR-4046	+	+*	fire warning device
5	DOT-4046	+	+*	fire warning device
6	DUR-4046	+	+*	fire warning device
7	DUR-4047	+	+*	fire warning device
8	DUR-4043	+	+*	fire warning device
9	DIO-4043	+	+*	fire warning device
10	DOR-4043	+	+*	fire warning device
11	TUN-4043	+	+*	fire warning device
12	ACR-4001	+	+	radio detector adapter
13	ADC-4001M	+	+	conventional line adapter
14	EKS-4001	+	-	input/output element
15	EWS-4001	+	-	control element
16	EWK-4001	+	-	control element
17	SAL-4001	+	+	sounder
18	ROP-4001M	+	+	manual call point
19	ROP-4001MH	+	+	manual call point
20	ROP-4007/4007H	+	+	manual call point

*V 6.0, V 7.0 or newer version of software in line elements is required



FIRE DETECTION

AND ALARM SYSTEMS

well designed SECURITY

DISTRIBUTED FIRE ALARM PANEL

FIRE ALARM SYSTEM POLON 6000



Overview

The addressable, interactive POLON 6000 fire alarm system is a set of latest technology equipment, designed for very fast detection and signaling of fire, precise indication of fire origin, control of fire protection safety devices, and information of appropriate intervention services or building guards about fire. It enables protection of mid-size, large and very large facilities, especially so called “intelligent” buildings with huge amount of fire protection safety devices. POLON 6000 can be easily integrated with many existing building management systems. Due to its specific features it enables to arrange perfect set of necessary devices, well-fitted to building conditions.

The POLON 6000 system is based on newly designed control panels with distributed architecture and new set of line elements (6000 series), supplemented with line elements of series 4000 with changed software version.

All devices of the POLON 6000 system meet requirements of the latest edition of EN 54 European Standards.

The POLON 6000 control panel with a distributed architecture

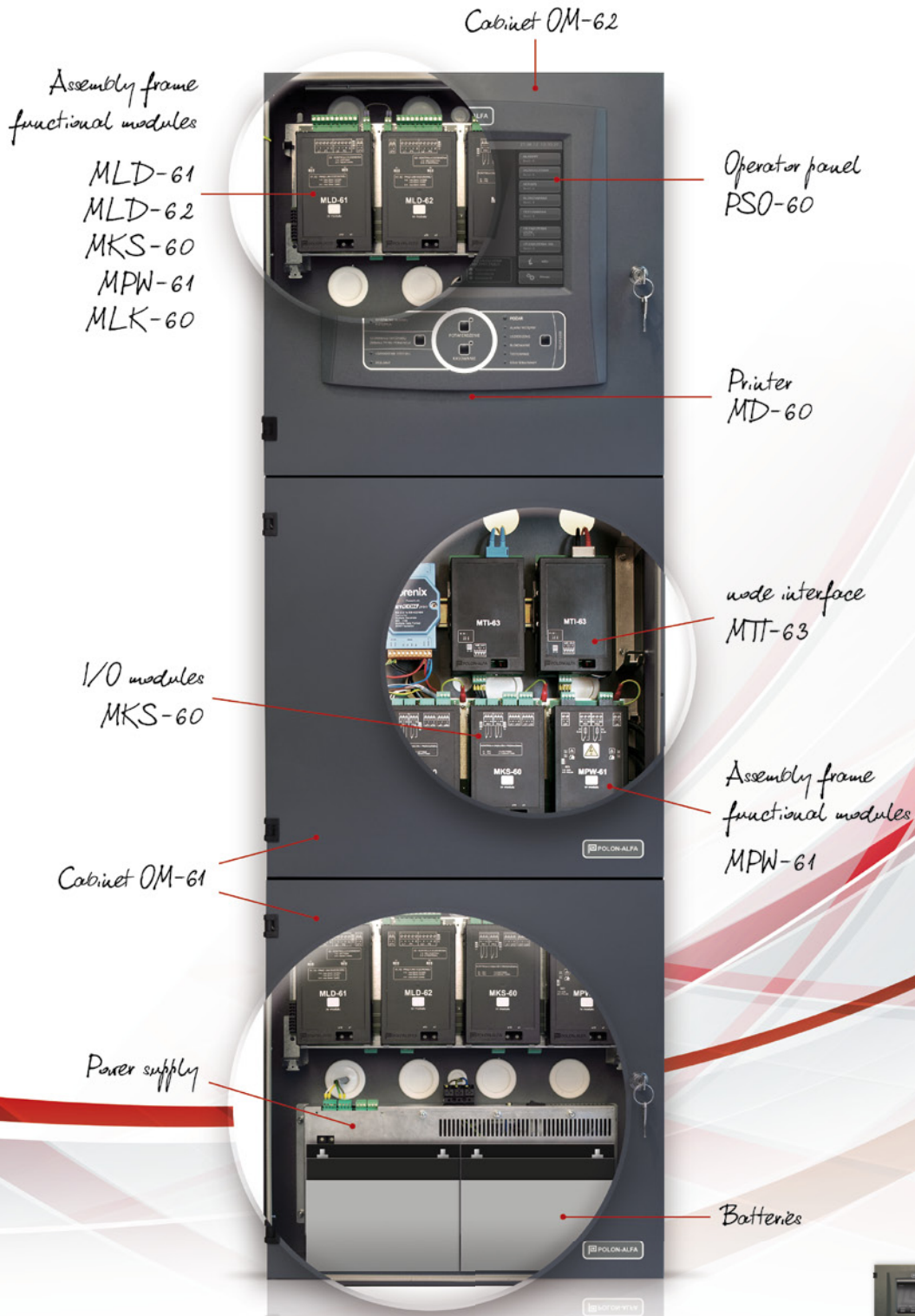
The POLON 6000 control panel was designed based on the idea of a module device with a distributed architecture. It consists of many unified modules of various types, installed inside standardized cabinets. Cabinets can be arranged as separate units or combined in sets (so called nodes) and can be located in different places of protected building, even if those locations are distant. All modules within one node and nodes between themselves are connected with a common, doubled (redundancy) digital communication bus.

Each control panel can be flexibly assembled with modules and nodes well-fitted to individual building requirements. Such solution enables the arrangement of the control panel equipment, installed in required locations. This provides maximum optimization of the system, reduction of cost of installation while the system is still extremely reliable and functional. This is possible due to implementation of doubled main processor controllers, communication buses and cable connections between nodes.

The POLON 6000 control panel consists of the PSO-60 panels with 10” touch screen, functional modules: detection lines MLD-61 and MLD-62, input-output modules MKS-60, relay outputs MPK-60, signalling outputs module MWS-60, high current relay outputs MPW-61, supervision inputs MWK-60, conventional lines module MLK-60, supply modules MZP-60 and transmission modules MTI-61, MTI-62, MTI-63 v2.

PSO panels and modules are installed inside the cabinets with standard dimensions, which can be mechanically connected. A set of such mechanically connected cabinets create a control panel node. The control panel has to have at least one node in which main control panel PSO-60 (having number 1) is installed. This is the “main node” of the control panel. There is always only one “Main node” in the system. The rest of elements (modules) of the control panel is configured in form of external nodes which are connected to the “main node”. The communication between nodes is provided by means of doubled cable connection (RS-485) or doubled fiber optic cables. Each node shall be equipped – depending on the size of node and expected current consumption – with one or more supply modules. Each node can contain line modules with connected detection lines, input-output modules for direct control or supervision of fire safety devices. In each external node the PSO-60 panel can be implemented, acting as the parallel operation panel.

▶ SAMPLE NODE CONFIGURATION **POLON 6000**



designed as per needs



► FIRE CONTROL PANEL **POLON 6000**



► Operator panel **PSO-60**

- 10" touch screen (800 x 600 pixels)
- double controller for redundancy purpose
- 2 channels for communication with functional modules
- up to 99 controllers in one distributed fire alarm panel

► Detection line modules **MLD-61 and MLD-62**



- 2 loops with max 250 devices
- including detection line voltage converter (MLD-62)
- without detection line voltage converter (MLD-61)
- A/B loop class

► I/O module **MKS-60**



- 2 potential-free relay outputs (1A, 30V)
- 2 potential outputs (0,5A, 30V)
- 2 monitoring inputs
- 2- or 3-state monitoring
- programmable fail-safe function

► Outputs module **MPK-60**



- 4 potential-free relay outputs (1A, 30V)
- relay output line continuity monitoring
- programmable fail-safe function

► Outputs module **MWS-60**



- 4 potential outputs (0,5A, 30V)
- full line monitoring
- programmable fail-safe function

► Inputs module **MWK-60**



- 8 monitoring inputs
- 2- or 3-state monitoring

► Outputs module **MPW-61**



- 2 high voltage potential-free relay outputs (5A, 230V)
- 2 high voltage monitoring inputs
- 2- or 3-state monitoring
- programmable fail-safe function

► FIRE CONTROL PANEL **POLON 6000**



► Conventional lines module **MLK-60**

- 8 conventional lines
- 32 conventional detectors per line or
- 10 MCPs per line



► Cabinets **OM-61 | OM-62 | OS-61**

elements of the control panel can be installed in several types of cabinets:

- OM-61 - dedicated for installation of functional modules, power suppliers and batteries,
- OM-62 - dedicated for installation of the operator panel PSO-60, printer and other modules or batteries,
- OS-61 - dedicated for installation of the operator panel PSO-60 only



► Battery containers **OA-61 | OA-62**

- OA-61 dedicated for batteries up to 134Ah
- OA-62 dedicated for batteries up to 90Ah
- cables included



► Nodes interfaces **MTI**

- MTI-61 – max distance 3 m, provides power supply
- MTI-62 – max distance 1200 m, galvanic separation, doesn't provide power supply
- MTI-63v2 – fibre optic communication with single-mode or multi-mode cable

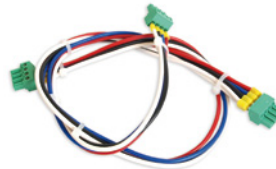


► Assembly frame **SM-60**

- max 4 function modules
- provides power supply and communication
- requires mounting brackets

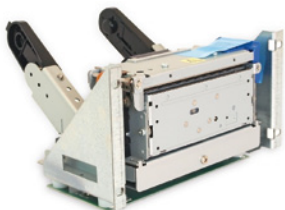
► Brackets **WP-61/WL-62 and WP-63/WL-64**

- mounting brackets for assembly frames installation



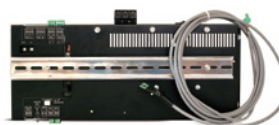
► Connection cables

- LK-61-035 (35 cm)
- LK-61-050 (50 cm)
- LK-61-070 (70 cm)
- LK-61-090 (90 cm)
- LK-61-320 connection wire for WPO-60 (320 cm)
- LK-62-035-050 wire splitter for SM-60, MTI-xx or MZ-60-xxx (35/50 cm)



► Printer **MD-60**

- fast thermal printer
- mounted inside main cabinet



► Power supply units **MZ-60-150, MZ-60-300**

- provides power for all functional modules
- fault and alarm relay
- self-monitoring function

▶ ADDRESSABLE DETECTORS AND MODULES **POLON 6000** & **POLON 4000**

▶ **Smoke detector DUO-6046**



- double sensor (IR,UV)
- soft addressing
- programmable parameters
- low current consumption
- automatic drift compensation
- built-in short circuit isolator
- EN 54-7, EN 54-17

▶ **Smoke and heat detector DUT-6046**



- double smoke sensor (IR,UV)
- double heat sensor
- soft addressing
- programmable parameters
- low current consumption
- automatic drift compensation
- built-in short circuit isolator
- EN 54-5, EN 54-7, EN 54-17

▶ **Smoke heat detector and CO DTC-6046**



- double smoke sensor (IR,UV)
- double heat sensor
- CO sensor
- soft addressing
- programmable parameters
- low current consumption
- automatic drift compensation
- built-in short circuit isolator

▶ **Heat detector TUN-6046**



- heat sensor
- soft addressing
- Programmable temperature class
- low current consumption
- built-in short circuit isolator
- EN 54-5, EN 54-17

▶ **Beam smoke detector DOP-6001**



- IR smoke detection
- soft addressing
- automatic drift compensation
- auto-alignment function
- built-in laser pointer
- programmable sensitivity
- low current consumption
- built-in short circuit isolator
- EN 54-12, EN 54-17

▶ **Manual call point ROP-4001M(H)**



- indoor and outdoor application
- flush mounting
- wall mounting with assembling frame
- soft addressing
- low current consumption
- built-in short circuit isolator
- EN 54-11 (type B)

▶ **Conventional line interface ADC-4001M**



- soft addressing
- 6 modes of operation
- built-in short circuit isolator
- EN 54-18

▶ **Addressable siren SAW-6000**



- SAW-6001 - sound
- SAW-6006 - voice & sound
- soft addressing
- 16 sound patterns - programmable
- 2 power options
- built-in short circuit isolator
- EN 54-3, EN 54-17

► ADDRESSABLE DETECTORS AND MODULES **POLON 6000** & **POLON 4000**

► Addressable siren SAL-4001



- indoor application
- soft addressing
- 3 sound patterns
- 3 power options
- built-in short circuit isolator
- EN 54-3

► Wireless devices adapter ACR-4001



- wireless communication with line elements
- loop powered
- communication with max 16 devices
- soft addressing
- built-in short circuit isolator
- EN 54-18, EN 54-25

► Wireless smoke detector DUR-4047



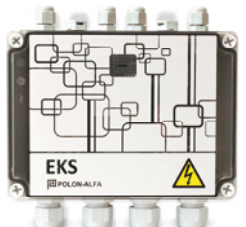
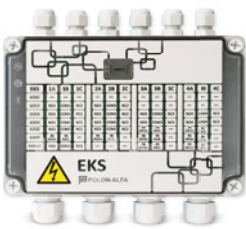
- UV wireless smoke detector
- battery powered (2 x CR123)
- 3 years of operation
- soft addressing
- automatic drift compensation
- built-in short circuit isolator
- EN 54-5, EN 54-25

► Wireless manual call point ROP-4007(H)



- UV wireless smoke detector
- battery powered (2 x ER14505V)
- 3 years of operation
- indoor and outdoor application
- flush mounting
- wall mounting with assembling frame
- soft addressing
- EN 54-11 (type B), EN 54-25

► I/O devices EKS-6000*



- EKS-6044 - 4 outputs
 - (2 A/230 V/62,5 VA)
 - 4 inputs (LV)
- EKS-6022 - 2 outputs
 - (2 A/230 V/62,5 VA)
 - 2 inputs (LV)
- EKS-6004 - 4 outputs
 - (2 A/230 V/62,5 VA)
- EKS-6040 - 4 inputs (LV)
- EKS-6202 - 2 outputs
 - (2 A/230 V/62,5 VA)
 - 2 inputs (HV)
- EKS-6400 - 4 inputs (HV)
- EKS-6222P - 2 outputs
 - (12 A/230 V/2,76 kVA)
 - 2 inputs (LV)
 - 2 inputs (HV)

- soft addressing
- extensive programming capabilities
- IP 66
- built-in short circuit isolator
- EN 54-18, EN 54-17

► Universal control panel UCS 6000



- smoke extraction controller
- soft addressing
- built-in short circuit isolator (with MKA-60)

more on next page

► Detector base G-40



- for all addressable and conventional detectors
- increased tightness
- screwless connection
- shield connector included
- optional assembly ring P-40
- optional base attachment PG-40

* dedicated for POLON 6000 only

[INNOVATION FUNCTION] ACOM 6.0

UNIVERSAL CONTROL PANEL UCS 6000



Overview

The UCS 6000 universal control panel is designed for activation of fire protection devices, used for mechanical or gravitation smoke ventilation (fire dampers, smoke exhaust dampers etc.) and enables the following:

- detection of fire (smoke, heat, flame);
- automatic or manual actuation of fire protection devices installed in smoke exhaust systems;
- acoustic and optical notification about the state of devices (alarm, fault condition);
- automatic monitoring of activation of fire protection devices (servomotors, electromagnets, ventilators etc.) of smoke exhaust systems;
- automatic monitoring of its own modules/circuits;
- transmission of main information to other FAP (e.g. POLON 6000, POLON 4000 system, IGNIS 1000/2000 system or other not manufactured by POLON-ALFA) about alarm condition, faults, present state of fire protection devices.

The UCS 6000 control panel can operate as an independent, multi-zone universal smoke exhaust controller or as an addressable device, which is installed in the addressable loop of the POLON 6000 or POLON 4000 system control panels.

Functions

The primary purpose of the UCS 6000 control panel, except fire detection, is to control and power fire protection devices such as various types of fire/smoke dampers, fire protection windows (equipped with electric servomotors), and fire zones separators (electromagnets), etc.

UCS 6000 control panel has got the innovative **ACOM 6.0** function implement. It allows for digital integration between the panel and POLON 4000 or POLON 6000 fire alarm control panels.

Due to a variety of power supply options and control methods of servomotors and electric fire prevention devices, the possibility to control of two-directional servomotors with double- or triple-wires has been implemented. For fire detection there is a dedicated conventional detection line. Activation of fire protection devices controlled by the smoke exhaust control panel is possible thanks to the following:

- detection of fire by conventional detection line (detectors),
- activation of PO-6x manual call point (ventilation button),
- receiving signal from external fire alarm control panel, e.g. from IGNIS 1000/2000,
- receiving commands from the POLON 6000 or POLON 4000 system control panel.

In case of receiving an alarm signal, smoke exhaust procedure is commenced. It is conducted in accordance with the fire scenario applied to the facility. During the fire alarm condition all daily ventilation buttons and signals from rain and/or wind sensor are disabled. In quiescent mode it is possible to activate daily ventilation function using dedicated buttons. UCS 6000 control panel modules are equipped with universal inputs and outputs. Dedicated computer application is used for programming the UCS 6000 control panels. The control panel is connected to a computer using USB interface.

Design

The UCS 6000 control panel is modular based panel. Depends on the configuration – number of output modules and total current load, one out of three different size cabinets can be used:

from 4 A to 16 A | from 4 A to 32 A | from 32 A to 64 A.

Apart from a number of output modules, the panel is equipped with the main controller, power supply unit, power supervising module.

▶ SMOKE VENTILATION SYSTEM CONTROLLER **UCS 6000**



▶ Main controller MGS-60

- main controller for managing the panel
- rain&wind sensor power supply output and signal input
- supervised alarm and fault relays
- MGL-60

▶ Control module MGL-60



- supervised output to power fire protection devices (4 or 8 A/30 V DC)
- conventional detection line
- conventional line for manual activation buttons
- limit switches input
- daily ventilation buttons input

▶ Power supply supervising module MZU-60



- battery charging and buffering
- fault relay
- supervised potential output for auxiliary devices

▶ I/O module MPW-60



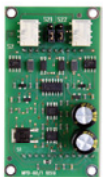
- 2 HV programmable relays (5 A/230 V)
- 2 LV monitoring inputs

▶ Manual activation buttons PO-60



- manual activation of fire protection devices
- flush mounting
- wall mounting with assembling frame
- activation LED (PO-61)
- activation LED and reset button (PO-62)
- activation, fault and quiescent LED and reset button (PO-63)
- optional daily ventilation buttons PP-61 and PP-62

▶ I/O module MPD-60



- 2 LV programmable relays (1 A/30 V DC)
- 2 LV monitoring inputs

▶ Addressable interface MKA-60



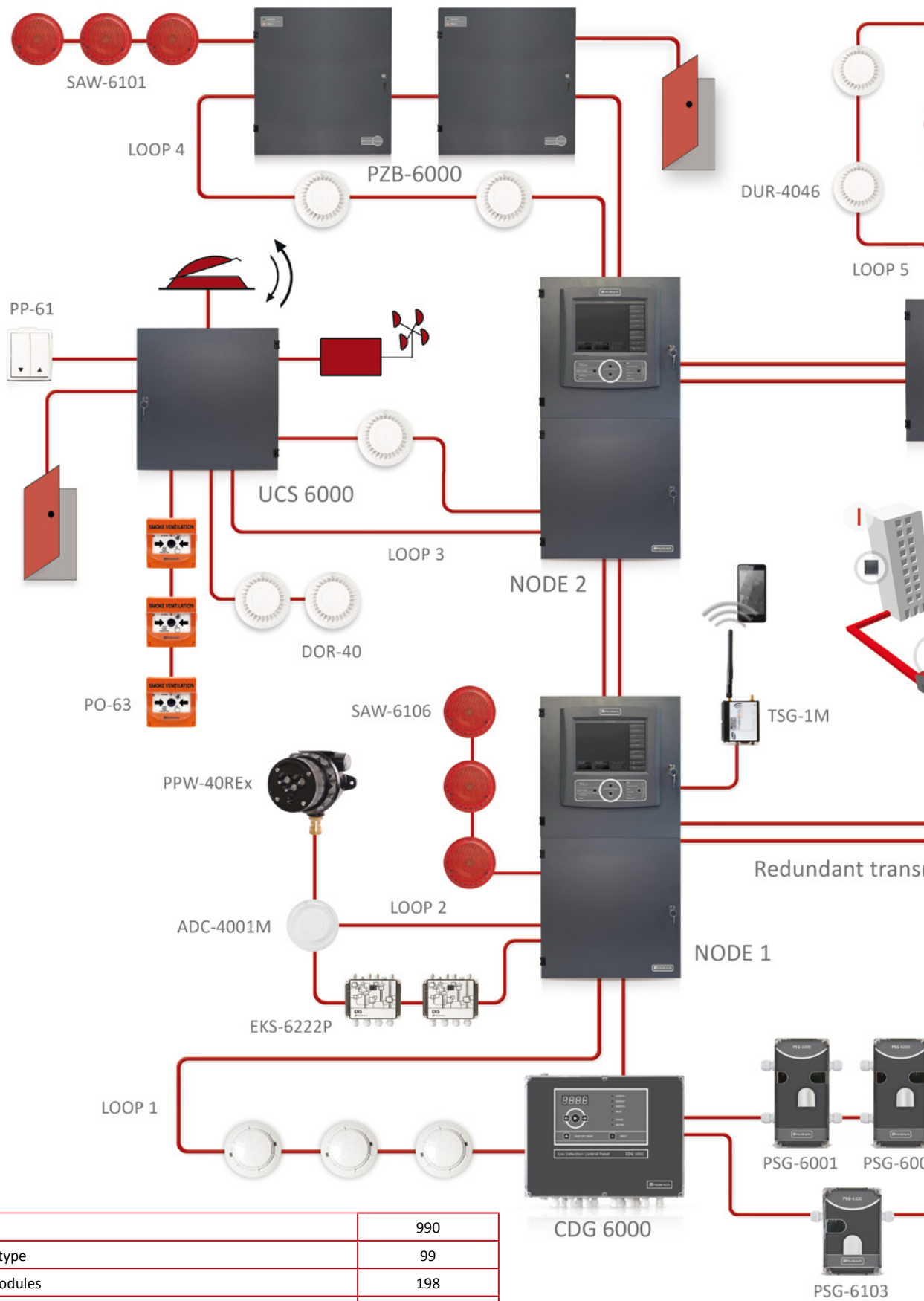
- digital communication with POLON 4000 or POLON 6000 fire alarm panel

▶ Power supply unit

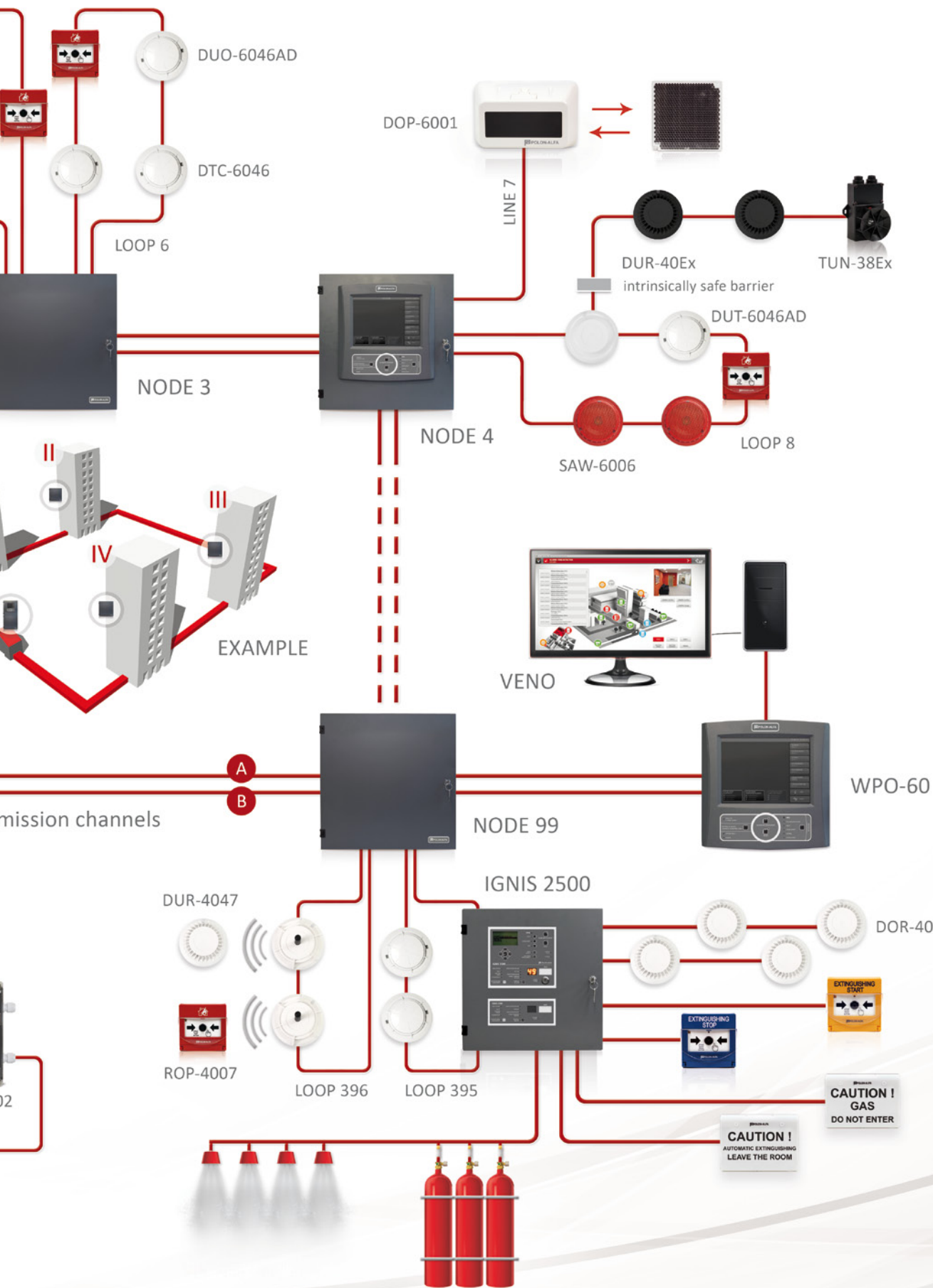


- powers section of modules
- 150 W
- 240 W
- 500 W





number of all modules	990
number of modules of one type	99
number of detection line modules	198
number of addressable lines/loops	396
number of addressable elements installed	99000
number of line elements on one loop	250
number of all possible control outputs	64000
number of control outputs on one loop	256
number of non-potential/potential control outputs on the functional modules	1000/600
number of all supervision inputs	64000
number of supervision inputs in one detection loop	256
number of supervision inputs in functional modules	1200

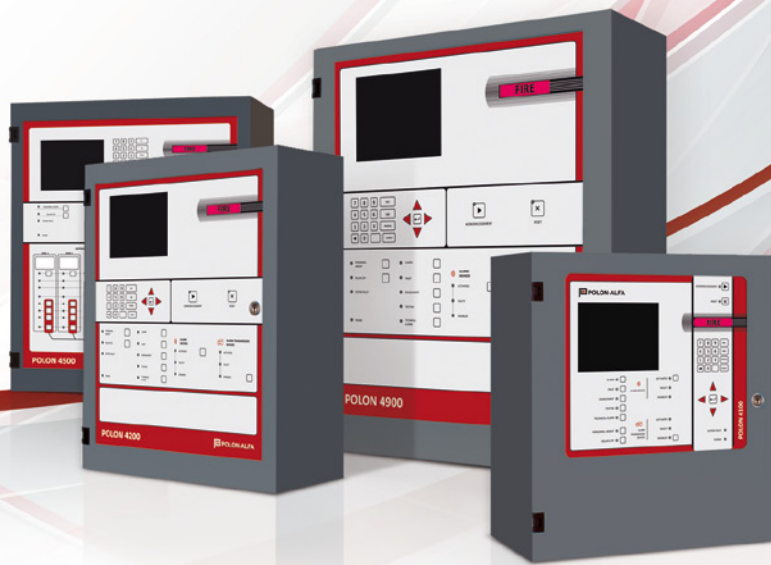


► POLON 6000
 DISTRIBUTED FIRE DETECTION AND ALARM SYSTEM

[INTERACTIVE]

INDISPENSABLE FOR MIDDLE-SIZE AND BIG FACILITIES

FIRE ALARM SYSTEM POLON 4000



Overview

Interactive, addressable fire alarm system POLON 4000 is the set of devices, designed for detection and signalling of fire, informing the suitable intervention services and for control of fire-fighting protecting devices. It enables for fire protection of middle-size, big and very big buildings. It is perfectly suitable for application in safety and security systems of intelligent buildings, because it is able to deliver a lot of digital information to integration and supervision systems, as well as to fire monitoring systems. POLON 4000 system bases on the principle of intelligent co-operation between all elements creating the system. Applied original protocol of signals transmission in detector loops and suitable control panels and line elements software, allow for interactive co-operation of line elements with the control panel and line elements between them.

Information exchange feature between fire detectors, which gives very early information about events in the protected area, ensures automatic analysis of situation detected by the system. This process allows to distinguish the fire condition from false alarms. Fire alarm control panels POLON 4900 and POLON 4500 can work in a hierarchical network with ring structure. The max number of control panels working in network can be 31. This enables flexible design of protection system in very big or dispersed buildings. There is possibility of full information interchange between individual elements in the ring structure. One control panel can be chosen as superior (master) in relation to all remaining, subordinated (slave) and co-ordinate operation of the system.

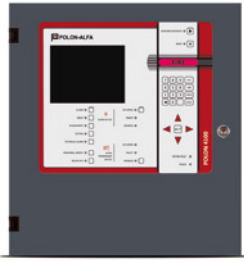
High operation reliability of POLON 4000 system is guaranteed by doubled processors circuits of the control panels (redundancy). All line elements in POLON 4000 system have built-in short-circuit isolators. Setting of line elements addresses can be also made with program, without using micro switches. All information about element are placed in its non-volatile memory and are read-out by the control panel after installing element in a detector line. Due to application of radio detectors, POLON 4000 system can be installed in places, where using of detector lines made with wires is not possible. Elements of POLON 4000 system fulfil requirements of the latest editions of series EN 54 European Standards.

Design and functions

The POLON 4000 control panels can have equipment with 8 addressable loops, with possibility to address max 127 line elements in each loop. With this control panel can work over 1000 addressable elements. Network operation of 31 control panels increases this number to over 31 000 elements. Addressable detectors working with any control panel can be assigned to detection zone and named with user communicate that can consist with two lines of text with 32 characters in each. Moreover, there is possibility to program own communicates for, so called, technical alarms and unmaskable faults, that refers to supervising functions of different kind of sub-systems or safety devices that the control panel can provide. Large graphic display facilitates communication of the user with the control panel. One of 17 alarming variants for each detection zone can be selected with software. Different alarming variants, responding to different detection algorithms, allow for optimal utilisation of possibilities offering by the system for fire detection taking into account environmental conditions existing in individual facilities. Due to advanced software, the control panel enables to create fire detection installation with flexible physical and logical structure. The POLON 4000 control panels can control of the signalling and fire protective devices using potential free relays outputs, 24 V outputs and monitoring inputs. Apart from this, unlimited control possibilities give input/output module EKS-4001 and EWS-4001 control module with 8 outputs, which are installed in detection loop. Serial interfaces RS-232 and RS-422 make possible connection to the control panel of computer keyboard, bar code scanner identifying line elements, digital monitoring system, integration and installation supervising system. Memory records and stores 2000 of last events, which appeared during system operation. Register of these events can be printed out on a paper, in the order of date and time, by the built in thermal printer, or shown on the control panel display as well as downloaded to the computer. The POLON 4500 control panel is an extended version of the POLON 4900 control panel. The POLON 4500 control panel meets the requirements of both EN 54 and EN 12094-1 standards.

► FIRE ALARM CONTROL PANELS **POLON 4000**

► **POLON 4100 - fire alarm panel**



- 2 loops with 64 addresses
- 3 supervised relay outputs
- 2 monitoring inputs
- supervised signalling line
- 240x320pix graphic display
- EN 54-2, EN 54-4

► **POLON 4200 - fire alarm panel**



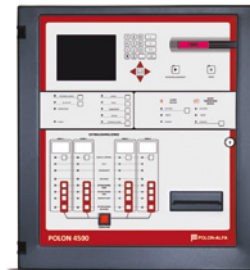
- 4 loops with 64 addresses
- 8 supervised relay outputs
- 2 monitoring inputs
- 2 supervised signalling lines
- built-in printer
- 240x320pix graphic display
- EN 54-2, EN 54-4

► **POLON 4900 - fire alarm panel**



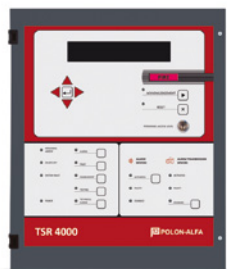
- 4 loops with 127 addresses
- optional 4 loops card
- network operation - MSI-48 required (up to 31 panels)
- 16 supervised relay outputs
- 8 monitoring inputs
- 8 supervised signalling lines
- redundancy "on board"
- built-in printer
- 240x320pix graphic display
- EN 54-2, EN 54-4

► **POLON 4500 - fire alarm and extinguishing panel**



- 4 loops with 127 addresses
- up to 4 extinguishing zones
- network operation - MSI-48 required (up to 31 panels)
- 16 supervised relay outputs
- 8 monitoring inputs
- 8 supervised signalling lines
- built-in printer
- 240x320pix graphic display
- EN 54-2, EN 12094-1

► **TSR 4000 - remote operator panel**



- up to 16 TSRs connected to one FACP
- relay output
- signalling line
- LCD display

► **Smoke detector DOR-4046**



- IR smoke sensor
- soft addressing
- programmable parameters
- low current consumption
- automatic drift compensation
- built-in short circuit isolator
- DOR-4043 for POLON 4100 and POLON 4200
- EN 54-7

► **Smoke detector DUR-4046**



- UV smoke sensor
- soft addressing
- programmable parameters
- low current consumption
- automatic drift compensation
- built-in short circuit isolator
- DUR-4043 for POLON 4100 and POLON 4200
- EN 54-7

► **Heat detector TUN-4046**



- heat sensor
- soft addressing
- programmable temp. class
- low current consumption
- built-in short circuit isolator
- TUN-4043 for POLON 4100 and POLON 4200
- EN 54-5

► FIRE CONTROL PANEL **POLON 4000**

► Smoke and heat detector **DOT-4046**



- IR smoke sensor
- heat sensor
- soft addressing
- programmable parameters
- low current consumption
- automatic drift compensation
- built-in short circuit isolator
- EN 54-5, EN 54-7

► Smoke and flame detector **DPR-4046**



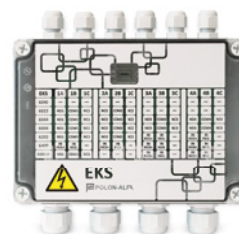
- IR smoke sensor
- flame sensor
- soft addressing
- programmable parameters
- low current consumption
- automatic drift compensation
- built-in short circuit isolator

► I/O devices **EKS-4001**



- one relay output (2 A, 30 V)
- 2 monitoring inputs
- 3 types of enclosures
- IP 65
- built-in short circuit isolator
- EN 54-18, EN 54-17

► I/O devices **EKS-4001W**



- one relay output (2 A, 230 V, 60 W)
- 2 monitoring inputs
- integrated enclosure
- IP 66
- built-in short circuit isolator
- EN 54-18, EN 54-17

► Multi-output device **EWS-4001**



- eight relay output (2 A, 30 V)
- integrated enclosure
- IP 65
- built-in short circuit isolator
- EN 54-18, EN 54-17

► Multi-input device **EWK-4001**



- eight monitoring inputs
- integrated enclosure
- IP 65
- built-in short circuit isolator
- EN 54-17

► Modbus RTU converter **CM-181**



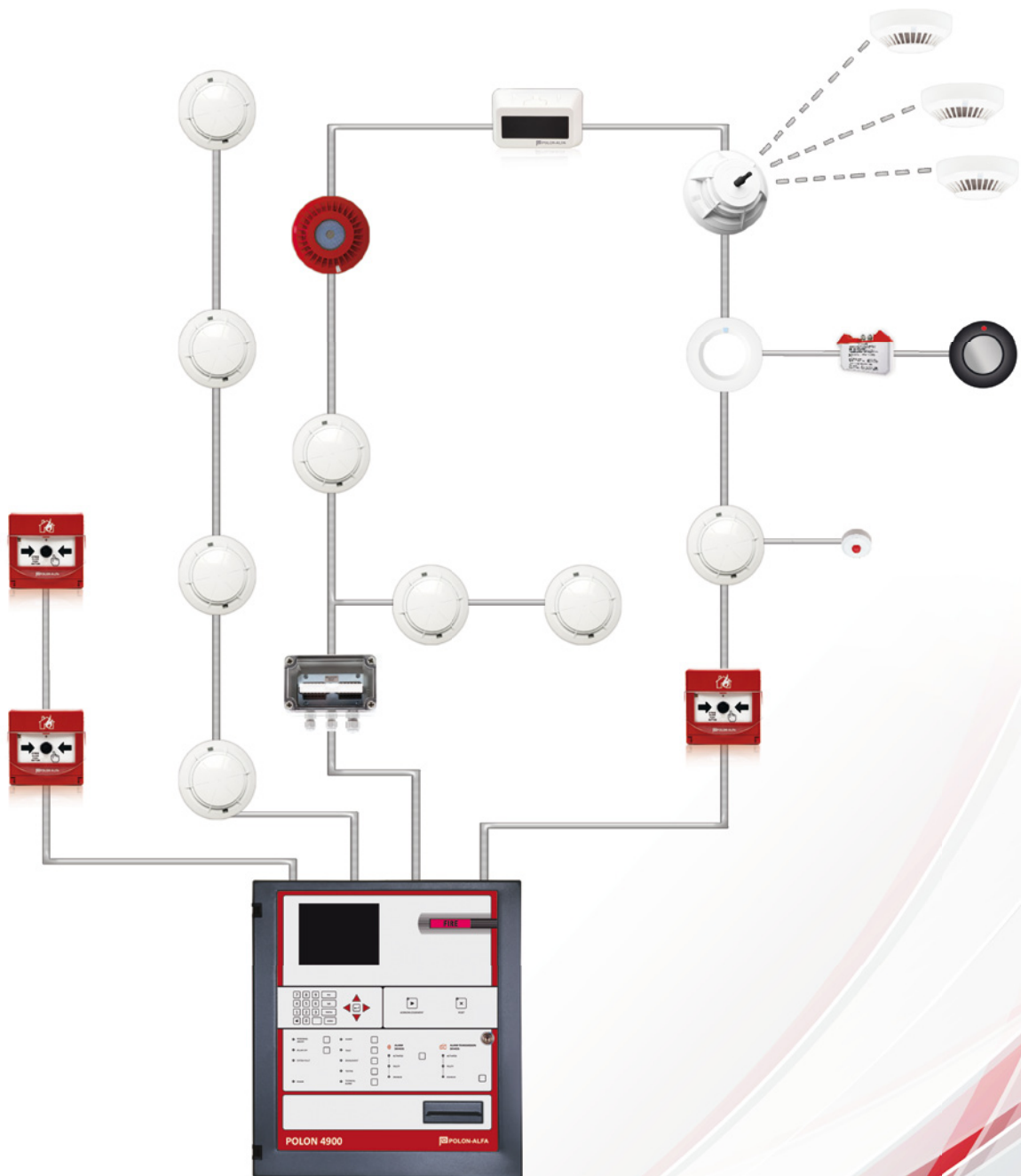
- PMC 4000 to Modbus converter
- integration and visualisation
- RS 232 and RS 485
- DIN rail installation

► BACnet MS/TP converter **CM-182**



- PMC 4000 to BACnet converter
- integration and visualisation
- RS 232 and RS 485
- DIN rail installation

FIRE CONTROL PANEL POLON 4000



POLON 4000 SAMPLE DETECTION LINES

[CONVENTIONAL]

THE BEST

FOR SMALL FACILITIES

FIRE ALARM SYSTEM **IGNIS 2000**



Overview

Small hotels or office buildings, middle-size stores and other – all these buildings are exposed to fire. They don't need, usually, extended and expensive fire alarm systems. That's why protection of these premises with the IGNIS 2000 system is very good solution.

The system consists of three control panels, with different number of detector lines. In connection with wide range of series 40 fire detectors such system can be use not only for fire detection but, in connection with the special IGNIS 2500 control panel, can give the possibility to control the automatic extinguishing process. Together with the extinguish panels POLON-ALFA offers dedicated buttons for extinguishing procedure activation or stopping and sirens. Localisation of fire origin is possible with accuracy to the detector line number, on which fire detectors or manual call points report fire.

Apart from standard point detectors, the system can be expand with intrinsically safe detectors dedicated to the explosive zones.

The newest IGNIS 2000 control panel brings a new feature which is the possibility to change the detection line functionality from detection to signalling lines what makes the panel more flexible.

System specification

- number of detection lines/zones – 4 to 6
- wide assortment of co-operating fire detectors:
 - point smoke detector (IR)
 - point smoke detector (UV)
 - beam smoke detector
 - heat detector
 - flame detector (UV)
 - multi-sensor smoke-heat detector
 - multi-sensor heat-flame detector
 - intrinsically safe detectors
- manual call point indoor and outdoor version
- supervised lines for activation of signalling devices
- programmable relay outputs
- power supply unit with automatic charging and battery internal
- supervising functions
- real time clock
- events memory and alarms counter
- RS 232/USB port for computer connection
- possibility for detection lines programming according to different variants
- possibility to disable zones
- possibility to test zones
- LCD display

▶ CONVENTIONAL FIRE ALARM SYSTEM **IGNIS 2000**

▶ **IGNIS 2040**



- max 6 detection zones
- max 2 signalling lines
- fault relay
- alarm relay
- 6 zone relays
- EN 54-2

▶ **IGNIS 2500**



- one or two extinguishing zones (MSG-25 modules)
- MGS-25 module parameters:
 - 6 relays
 - 6 inputs
 - 4 potential outputs
 - 6 conventional detection lines
- optional modules: MKS-60, MWS-60, MPK-60 (see page 4)
- optional MKA-25 module for communication with POLON 6000 panel
- EN 54-2, EN 54-4, EN 12094-1

▶ **Smoke detector DOR-40**



- IR smoke sensor
- low current consumption
- automatic drift compensation
- EN 54-5

▶ **Smoke detector DUR-40**



- UV smoke sensor
- low current consumption
- automatic drift compensation
- EN 54-5

▶ **Heat detector TUP-40**



- heat sensor (A1R)
- low current consumption
- EN 54-7

▶ **Smoke and heat detector DOT-40**



- IR smoke sensor
- heat sensor (A1R)
- low current consumption
- automatic drift compensation
- EN 54-5, EN 54-7

▶ **Heat and flame detector TOP-40**



- heat sensor (A1R)
- flame sensor
- low current consumption

▶ **Manual call point ROP-63(H)**



- indoor and outdoor application
- flush mounting
- wall mounting with assembling frame
- EN 54-11 (type B)

▶ CONVENTIONAL FIRE ALARM SYSTEM **IGNIS 2000**

▶ Remote alarm indicator **WZ-31**



- additional optical alarm notification
- small dimensions
- powered from the connected detector

▶ START/STOP extinguishing buttons **PU-61, PW-61**



- activation or stopping the extinguishing process
- works with IGNIS 1520M and POLON 4500
- flush mounting
- wall mounting with assembling frame
- EN 12094-3

▶ Warning devices **SE-1, SW-1**



- SE-1 evacuation warning device – inform about the need to leave extinguishing area
- SW-1 warning device – alerts to enter to the extinguishing area
- powered from the extinguishing panel
- built-in buzzer and flasher

▶ Intrinsically safe smoke detector **DUR-40Ex**



- UV smoke sensor
- low current consumption
- automatic drift compensation
- dedicated to the explosive zones
- II 2G Ex ib II C T6 Gb
- EN 54-7, ATEX

▶ Intrinsically safe heat detector **TUN-38Ex**



- programmable temperature class
- no base required
- low current consumption
- dedicated to the explosive zones
- II 2G EEx ib IIC T5/T6
- EN 54-5, ATEX

▶ Intrinsically safe flame detector **PUO-35Ex**



- UV flame sensor
- low current consumption
- dedicated to the explosive zones
- II 2G EEx ib IIC T6
- requires G-33 base
- standard version available
- EN 54-10, ATEX

UNIVERSAL PRODUCTS

▶ Fireproof triple IR flame detector **PPW-40REx**



- flame detection based on three independent flame sensors
- unique self-test feature
- built-in event log
- fire and fault relays
- current loop output 4-20 mA
- RS-485 for digital communication and programming
- II 2G Ex ib II C T6 Gb
- II 1D Ex ta IIIC T85°C
- EN 54-10 (class 1) ATEX

▶ GSM transmitter **TSG-1M**



- communication through GSM network
- connection through RS-232
- dedicated for POLON 4000 and POLON 6000
- 2 additional inputs
- configuration with the computer
- easy configuration

▶ UNIVERSAL BEAM SMOKE DETECTOR **DOP-6001R**



EN 54
CERTIFIED



ALARM AND
FAULT RELAYS



LARGE COVERAGE
AREA: 5-100 M
OPERATION RANGE



EASY OPTICAL
PATH ALIGNING WITH
LASER POINTER



TRANSMITTER
AND RECEIVER
MOUNTED IN ONE HOUSING
- SIGNIFICANT ECONOMY
IN WIRING



UNIQUELY SUITABLE
FOR SMOKE DETECTING



ADJUSTABLE SENSITIVITY
THRESHOLD LEVELS



**OPERATES WITH ANY
FIRE ALARM SYSTEM**



EN 54-12:2002
Cert/LPCB ref. 1283a



POLON-ALFA S.A. is a Polish enterprise that has been involved in research and development and production activity in the fire detection and alarm system business for over 60 years. The company beginning dates back to the fifties of the previous century when a laboratory focused on ionisation radiation was established. This workshop created, as the first one in Poland and the third in the world, an ionisation smoke detector in 1962. Its main activity was focused on manufacturing of nuclear radiation measurement devices which are still a part of the company production. In the course of time, the firm main business interest was set on fire detection and alarm systems and therefore nowadays Polon-Alfa is the main manufacturer of those devices in Poland and one of the leading ones in Europe.

POLON-ALFA main asset is a team of qualified, well trained and experienced engineers who are able to work out and develop very comprehensive state-of-art solution. The company assortment is steadily extended and enhanced: nowadays it comprises both conventional and addressable fire detection systems as well as control panels suitable for smoke exhaust controlling installations.

Most attention is given to the product high quality – therefore the company obtained the ISO 9001 quality management system certificate in 1998. All devices manufactured by POLON-ALFA have been approved by the EU notified authorities with EC-Conformity Certificates that confirm that the goods meet the European Standards requirements (in particular the EN 54 standard). The company possesses highly advanced research and quality control equipment including a fire test chamber, which gives a testing possibility in real fire conditions. As the factory specialises in design and production of equipment used in various important fields, some devices are attested by ATEX certificates that confirm their suitability in explosive dangerous conditions. Since 2002 the company has the NATO NCAGE code and approval.

The innovative fire protection systems created and developed by the company have been proved in small premises such as households and small offices or shops as well as in much bigger ones: hotels, office and historical buildings, industrial factories, etc. The devices marked with the POLON-ALFA logotype are installed and secure premises mainly in Poland and in many other countries.

Dynamic product development assured by the young qualified engineering staff and supported by five decade experience confirm that the workers may feel proud of their products highest level expressed in the phrase: **POLON-ALFA. LATEST TECHNOLOGY. HIGHEST QUALITY.**

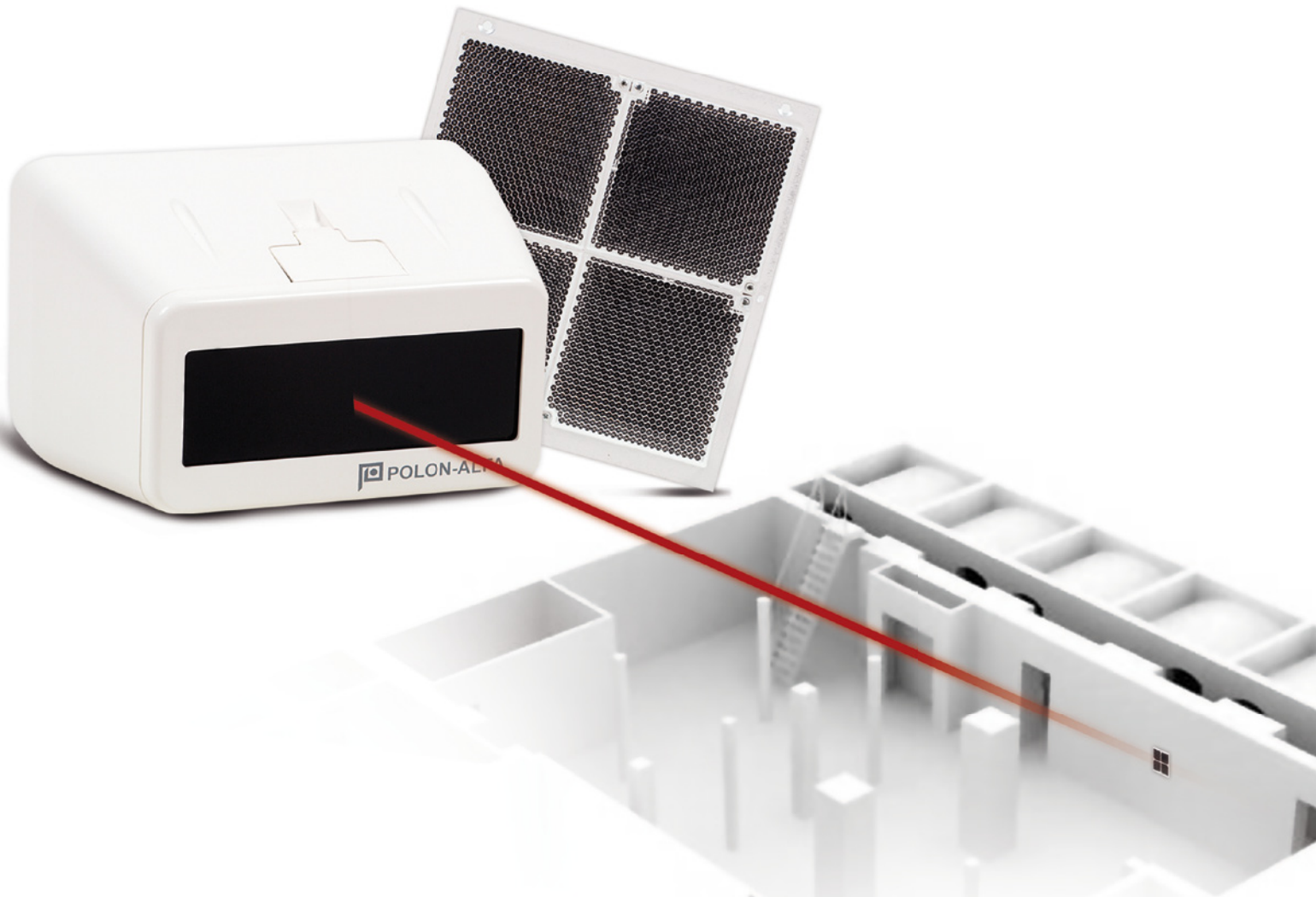
POLON-ALFA S.A.

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BEAM SMOKE DETECTOR

DOP-6001R



- Large area coverage: 5 – 100 m operation range
- Uniquely suitable for smoke detecting
- Adjustable sensitivity threshold levels
- Transmitter and receiver mounted in one housing – significant economy in wiring
- Easy optical path aligning with laser pointer
- EN 54 Certified



EN 54-12:2002
Cert/LPCB ref. 1283a



**OPERATES WITH ANY
FIRE ALARM SYSTEM**

BEAM SMOKE DETECTOR **DOP-6001R**

The beam smoke detector **DOP-6001R** is designed for detection of smoke, originating in early stage of fire growth. It is especially suitable for protection of rooms, where in the first phase of fire appearing of smoke is expected and in such places, where due to large area large number of point smoke detectors would need to be used.

The detector analyses value of smoke density along the optical beam, and therefore is especially useful for application under high ceilings or in such places, where smoke can be scattered in large area before detection. Beam detectors are especially recommended for application in such buildings like churches, cathedrals, historical buildings with very valuable ceilings, theatres, opera-houses, sporting halls, manufacturing halls, very high rooms, in which point detectors would be ineffective, rooms with differentiated ceilings, corridors, cable ducts, area over false ceilings etc.

DOP-6001R is equipped with both fire and fault relays for operation with any fire detection and alarm systems. The detector requires external power supply.

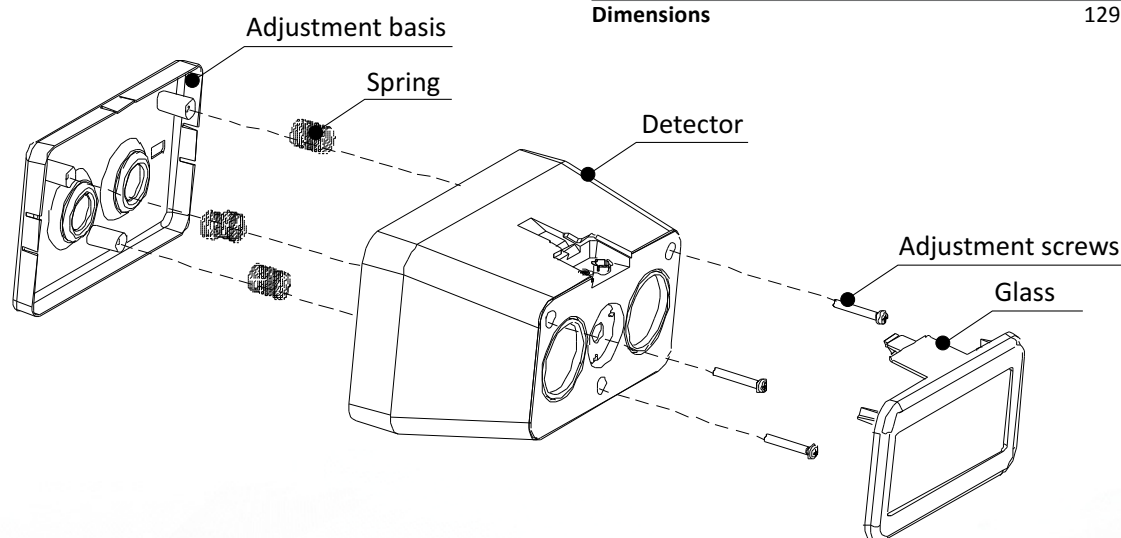
Specific features

- Transmitter and receiver are placed in one cabinet and infrared radiation beam reflects from a special prismatic reflector, therefore there is no need to connect the transmitter and the receiver with cable, as in case of most similar detectors available on the market, which have transmitter and receiver in independent casings – installation cost is decreased.
- Built-in a laser pointer enables easy and accurate adjustment of optical path of the detector, what is the most labour-consuming process, especially at considerable distances.
- The special prismatic reflector has additional feature of infrared beam concentration, directing it to the receiver. This allows for installation of reflectors on walls and structures subjected to small vibrations, due to presence of heavy machines, as well as deformations as result of big temperature changes (e.g. between day and night).

- Processor-based detector with self-adjusting function, which analyses protected area; decision concerning fire alarm condition is undertaken after several verifications of measured value and comparison with different models of fire growth.
- Early information for the service staff, that the optical elements are soiled (e.g. due to dust deposition) and auto compensation function for maintaining of ability to detect fire threat.
- Flat sensitivity characteristic, independent from dimensions of smoke particles, what gives the possibility of detector's versatile application. Protection of large area with one beam detector – eliminates the need to use dozen or so point detectors.
- There is possibility to set sensitivity thresholds depending on distance between detector and reflector, and depending on environmental conditions.

Technical data

Operating voltage	from 9.5 to 28 V
Operating current (depending on control panel)	from 8 to 30 mA
Alarm current	from 20 to 100 mA
Current at break of light beam	< 0.3 mA
Service signal current	< 0.3 mA
Operation distance with E39-R8 reflector	from 5 to 50 m
Operation dist. with set of reflectors 4 x E39-R8	from 50 to 100 m
Sensitivity thresholds (at choice)	18%, 30%
Number of detectors in one conventional line	acc. to project
Load of fire and fault alarms relays contacts	1 A/30 V
Power supply of laser pointer (only during adjustment)	9 V 6F22 battery
Operating temperature range	from -15°C to +55°C
Dimensions	129 x 80 x 84 mm



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