

UCS-6000

UNIVERSAL FIRE CONTROL PANEL

POLON 4000 and POLON 6000 INTERACTIVE FIRE DETECTION AND ALARM SYSTEM

INSTALLATION AND MAINTENANCE MANUAL

IK-E345-001GB

I Edition



The UCS-6000 Universal Fire Control Panel covered by the present manual complies with the requirements of the Technical Approval No. CNBOP AT-0401-0331/2012 and the following European Union Directives:

LVD 2006/95/WE on electric equipment applicable in certain voltage ranges;
EMC 2004/108/WE on electromagnetic compatibility.

The universal control panel has been approved with the Certificate of Conformity No. 2798/2012 issued by the Scientific and Research Centre for Fire Protection (CNBOP) Józefów, Poland, an EU notified authority No. 1438, confirming its compliance with the requirements of Technical Approval that meets requirements of the PN-EN 12101-10, PN-EN 54-4 standards.

The certificate may be downloaded from www.polon-alfa.pl web site.

Read the manual carefully before the detector assembling and commissioning.

Any nonconformity with the instructions contained in the manual may be harmful or may cause violation of the law in force
POLON-ALFA bears no responsibility for any damage resulting from usage inconsistent with the manual.

A waste product, unsuitable for further use, shall be passed to a waste electric and electronic equipment collection point.



NOTE: The manufacturer reserves the right to change specifications of products at any time without prior notice.

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1 INTRODUCTION

1.1 Documentation contents

The subject matter of this Operation and Maintenance Documentation (OMD) is the UCS 6000 universal control panel (Fig. 1.1, Fig. 1.2), which is a part of the POLON 4000 system.

The OMD is intended for designers, installers and maintenance technicians of the UCS 6000 universal control panel. The OMD contains information necessary for the panel proper installation, programming, servicing and operation.

1.2 Control panel application

The UCS 6000 universal control panel (hereinafter referred to as 'the panel') is a microprocessor-based device designed for actuation of fire protection devices, used for gravitation or mechanical smoke ventilation (smoke exhaust dampers, fire dampers, etc.) and daytime airing.

The panel unit is adapted to work in closed premises of low dust contents, temperature ranging between - 10 °C and + 55 °C and relative air humidity up to 80% at + 55 °C.

1.3 Safety conditions

1.3.1 Electric shock protection

The UCS 6000 universal control panels are ranked as 1st protection class devices and can be used only with additional protection against electric shocks, i.e. mains earthing or protective grounded installation.

230 V/50 Hz mains supply circuits insulation is reinforced and resists 2800 V voltage test. Low-voltage circuits (below 42 V) insulation is able to resist test voltage of 700 V DC.

1.3.2 Installation and equipment safety

Wire installation should be made using cables of the required fire resistance and should be properly protected in passages through fire zone boundaries.

In order to avoid undesirable interaction, a required distance between the low-voltage installation and a power installation and a lightning protection system should be maintained.

From the system interference resistance, it is recommended to utilise protective grounding.

Reserve power supply batteries should be connected to the panel at the final stage of the installation.

The panel components are heat sensitive. The maximum ambient temperature should not exceed + 55 °C. Air humidity in the premises where the panel operates should not exceed 80 %. No objects should be placed on the panel, which should be also prevented from water penetration into the device.

1.3.3 Repair works and maintenance

Maintenance works and periodical inspections should be executed by skilled personnel employed by companies authorised or trained by Polon-Alfa. Any repair works must be carried out by the manufacturer. Polon-Alfa bears no responsibility for the operation of any apparatus being serviced or repaired by unauthorised personnel.

1.3.4 Fuse replacement

In the event of fuse replacement, an equivalent fuse should be used: of the appropriate type and nominal value. The corresponding data (types and nominal values) are contained in point 9.1 of this manual.

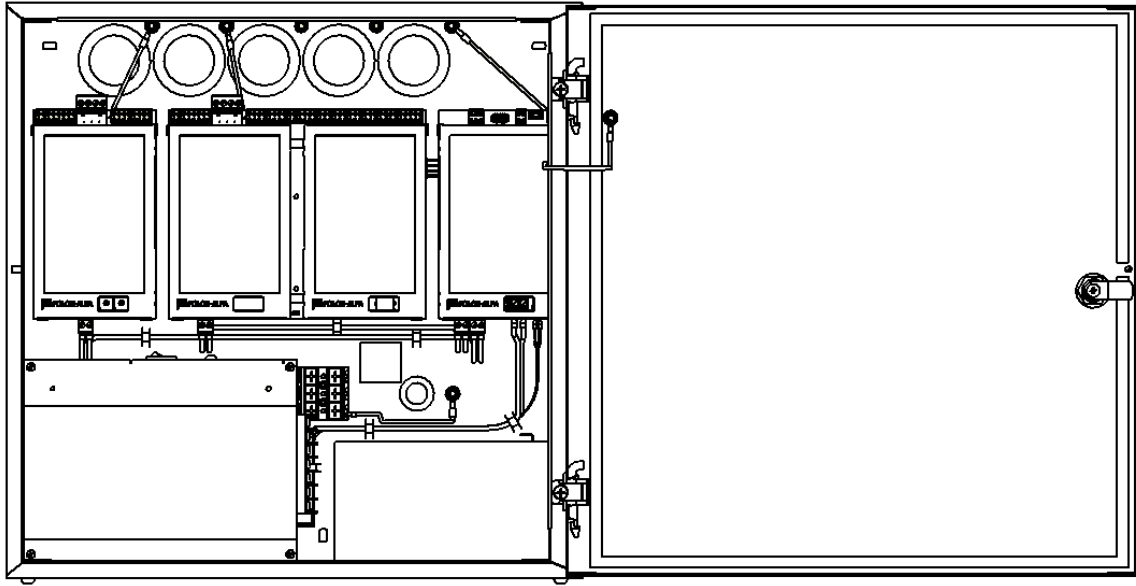


Fig. 1.1 UCS 6000 control panel up to 16 A

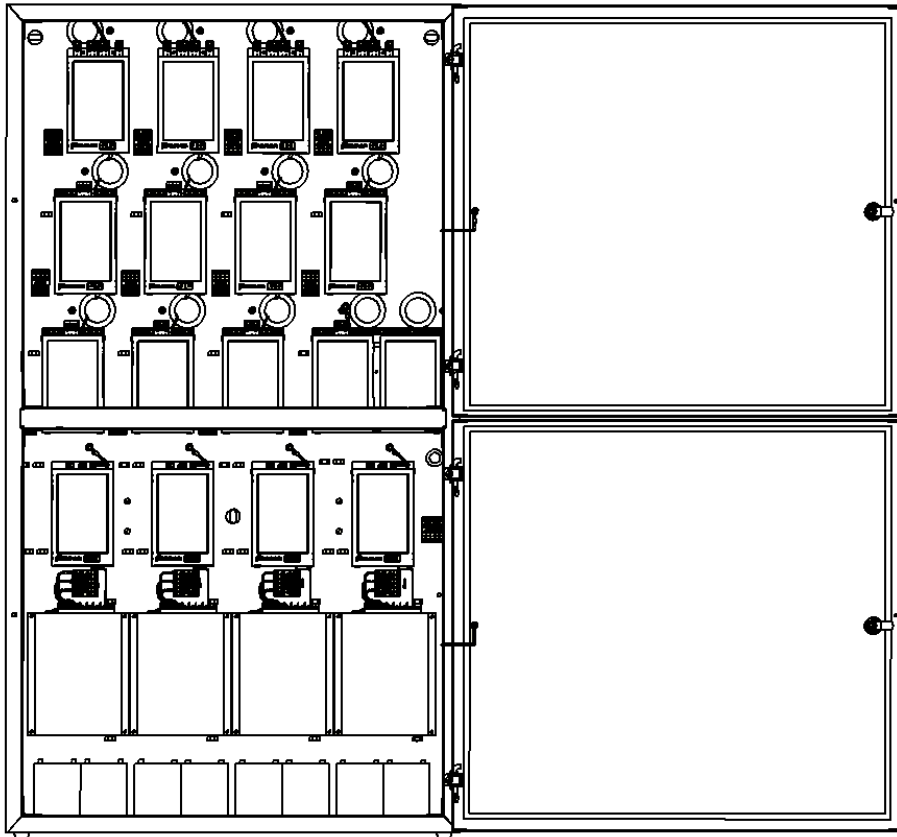


Fig. 1.2 UCS 6000 control panel from 32 A to 64 A

2 CONTROL PANEL DESIGN AND COMPLETENESS

The UCS 6000 universal control panel is a module-type microprocessor-based device which combines functions of a fire detecting and alarm control panel and a universal smoke exhaust controller furnished with a daytime airing option.

The panel consists of the following functional modules and batteries:

- MGS-60 4A module – a main controller module (with one MGL module enclosed, 4 A version);
- MGS-60 8A module - a main controller module (with one MGL module enclosed, 8 A version);
- MZU-60 module - a universal power supply module (16 A/24 V);
- MGL-60 4A module – a group-line module, 4 A version;
- MGL-60 8A module – a line-group module, 8 A version;
- MPW-60 module – a high-voltage relay module (2 x PK 5 A/230 V, 2 x LK 24 V);
- MKA-60 module – an addressable communication module (POLON 4000 system);
- MPD-60 module – an auxiliary relay module (2 x PK 1 A/24 V, 2 x LK 24 V);
- SP-150-27.5PLA module – a power supply device module 150 W (5 A);
- SP-240-27.5PLA module – a power supply device module 240 W (10 A);
- SP-500-27.5PLA module – a power supply device module 500 W (20 A); '1' execution (SP1), '2' execution (SP2);
- 7.2 – 9 Ah battery – 2 pcs per each universal power supply module.

Table 2.1. Maximum quantity of modules in the UCS 6000 panel

MGS 60 (+ MGL 60)	MGL 60	MZU 60	MPW 60	MPD 60	MKA 60	SP 150	SP 240	SP1 500	SP2 500	AKU 7.2 – 9 Ah
1	7	4	4	1	1	1	1	1	4	8

Table 2.2. Basic assembling – casing up to 16 A (400 x 400 x 160)

Version	MGS 60		MGL 60		MZU 60	MPW 60	POWER SUPPLY UNIT			AKU	MPD 60	MKA 60	Current
	4A	8A	4A	8A	16A	pcs	SP 150	SP 240	SP1 500	pcs	pcs	pcs	
1	1	-	-	-	1	1 •	1	-	-	2	1 •	1 •	4A (1x4A)
2	1	-	1	-	1	-	-	1	-	2	1 •	1 •	8A (2x4A)
3	-	1	-	-	1	1 •	-	1	-	2	1 •	1 •	8A (1x8A)
4	-	1	-	1	1	-	-	-	1	2	1 •	1 •	16A (2x8A)

Table 2.3. Special assembling (to be ordered) – casing up to 16 A (400 x 400 x 160)

Version	MGS 60		MGL 60		MZU 60	MPW 60	POWER SUPPLY UNIT			AKU	MPD 60	MKA 60	Current
	4A	8A	4A	8A	16A	pcs	SP 150	SP 240	SP1 500	pcs	pcs	pcs	
5	1	-	-	-	1	1	1	-	-	2	1 •	1 •	4A (1x4A)
6	-	1	-	-	1	1	-	1	-	2	1 •	1 •	8A (1x8A)

• – optional

Table 2.4. Basic assembling – casing 32 A – 64 A (1150 x 630 x 190)

Version	MGS 60		MGL 60		MZU 60	MPW 60	POWER SUPPLY UNIT			AKU	MPD 60	MKA 60	Current
	4A	8A	4A	8A	16A	pcs			SP2 500	pcs	pcs	pcs	
7	-	1	-	3	2	-	-	-	2	4	1 •	1 •	32A (4x8A)

Table 2.5. Special assembling (to be ordered) – casing 32 A – 64 A (1150 x 630 x 190)

Version	MGS 60		MGL 60		MZU 60	MPW 60	POWER SUPPLY UNIT			AKU	MPD 60	MKA 60	Current
	4A	8A	4A	8A	16A	pcs			SP2 500	pcs	pcs	pcs	
8	-	1	-	5	3	-	-	-	3	6	1 •	1 •	48A (6x8A)
9	-	1	-	7	4	-	-	-	4	8	1 •	1 •	64A (8x8A)
10	-	1	-	4	3	3 •	-	-	3	6	1 •	1 •	40A (5x8A)
11	-	1	-	6	4	4 •	-	-	4	8	1 •	1 •	56A (7x8A)
12	-	1	-	3	2	1	-	-	2	4	1 •	1 •	32A (4x8A)
13	-	1	-	3	2	2	-	-	2	4	1 •	1 •	32A (4x8A)
14	-	1	-	5	3	1	-	-	3	6	1 •	1 •	48A (6x8A)
15	-	1	-	5	3	2	-	-	3	6	1 •	1 •	48A (6x8A)
16	-	1	-	5	3	3	-	-	3	6	1 •	1 •	48A (6x8A)
17	-	1	-	7	4	1	-	-	4	8	1 •	1 •	64A (8x8A)
18	-	1	-	7	4	2	-	-	4	8	1 •	1 •	64A (8x8A)
19	-	1	-	7	4	3	-	-	4	8	1 •	1 •	64A (8x8A)
20	-	1	-	7	4	4	-	-	4	8	1 •	1 •	64A (8x8A)

• – optional

The MPD-60 and MKA-60 optional modules (ordered separately) are installed on the MGS-60 main controller module and interoperate with every equipment version.

The MPW-60 module ('5' - '6', '12' - '20' versions) is optional and is supplied separately.

All highlighted equipment assembly versions are treated as basic. Other variants are available on request.

The SP-500-27.5PLA power supply device is available in two variants: SP1 (for the housing up to 16 A 400 x 400 x 160) and SP2 (for the housing from 32 A to 64 A 1150 x 630 x 190).

3 TECHNICAL SPECIFICATIONS

Table 3.1

INPUT PARAMETERS	
Basic power supply voltage	230 V AC + 10 % - 15 %
Basic power supply voltage frequency	47 ... 63 Hz
Maximum mains voltage draw Casing up to 16 A Casing from 32 A to 64 A	< 7 A < 28 A
Reserve power supply source Casing up to 16 A Casing from 32 A to 64 A	Max. 2 x 12 V / 7.2 – 9 Ah 8 x 12 V / 7.2 – 9 Ah
Current draw from batteries during quiescent mode	< 120 mA
Current draw from POLON 4000 system addressable detection line	< 0,6 mA
OUTPUT PARAMETES	
Control panel operation voltage	24 V DC + 25 % - 25 %
Direct current available from mains power supply unit: - 150W power supply unit - 240W power supply unit - 500W power supply unit	5 A 10 A 20 A

INPUT PARAMETERS	
MGS-60 MODULE	
External alarm line	
Maximum line resistance: Line insulation resistance: Line end-of-line resistor:	2 x 120 Ω > 100 k Ω 5,6 k Ω \pm 5 %; 0,5 W
Rain and/or wind sensor power supply:	
Output voltage: Output current:	24 V DC + 25 % - 25 % 0,5 A
Rain and/or wind sensor signal monitoring line	
Maximum line resistance: Line insulation resistance:	2 x 100 Ω > 100 k Ω
PKA alarm relay	
NO/NC terminal current-voltage load: Top – activation delay time: Continuity monitoring (adjustable and programmable):	1 A / 24 V DC programmable YES
PKU fault relay	
NO/NC terminal current-voltage load:	1 A / 24 V DC

MGL-60 MODULE	
Main input	
Input voltage: Output current: Operation modes (programmable): T1 – activation delay time: T2 – activation time: T3 – activation break time: Continuity monitoring (programmable):	24 V DC + 25 % - 25 % 4 A or 8 A 3 programmable programmable programmable YES
Limit switch status monitoring lines	
Maximum line resistance: Line insulation resistance: Status monitoring (programmable): Continuity monitoring (programmable):	2 x 100 Ω > 100 k Ω YES YES
OPEN CLOSE airing push buttons lines	
Maximum line resistance: Line insulation resistance:	2 x 100 Ω > 100 k Ω
Conventional detection line	
Number of detectors (40 model range) in line: Maximum line resistance: Line insulation resistance: End-of-line resistor:	32 2 x 120 Ω > 100 k Ω 5,6 k Ω \pm 5 %; 0,5 W

Maximum quiescent mode detectors current: Total quiescent mode line current max.:	2 mA 7 mA
PO-6x manual smoke exhaust push buttons line	
Maximum number of push buttons in line: Maximum line resistance: Line insulation resistance: ACTUATION and RESET line end-of-line resistor: Maximum quiescent mode current of 1 push button: Quiescent mode line total current:	8 6 x 120 Ω > 100 kΩ 5,6 kΩ ± 5 %; 0,5 W 12 mA < 100 mA
MPW-60 MODULE	
PK1 i PK2 relays	
NO/NC terminal current-voltage load: Operation modes (programmable): Activation variants (programmable) T1 – activation delay time: T2 – activation time: T3 – activation break time: N – controlling impulses number	5 A/ 230 V AC 4 5 programmable programmable programmable programmable
PK1 and PK2 relayactuation LK1 and LK2 monitoring lines	
Maximum line resistance: Line insulation resistance:	2 x 100 Ω > 100 kΩ
MPD-60 MODULE	
PK1 i PK2 relays	
NO/NC terminal current-voltage load: Operation modes (programmable): Activation variants (programmable) T1 – activation delay time: T2 – activation time: T3 – activation break time: N – controlling impulses number	1 A/ 24 V DC 4 5 programmable programmable programmable programmable
LK1 i LK2 monitoring lines	
Operation modes (programmable): Maximum line resistance: Line insulation resistance:	3 2 x 100 Ω > 100 kΩ
MZU-60 MODULE	
PKUZ power supply fault relay	
NO/NC terminal current-voltage load:	1 A / 24 V DC
Output to external devices power supply	
Output voltage: Output current:	24 V DC + 25 % - 25 % 0,5 A

ENVIRONMENTAL PARAMETES	
Transportation temperature	- 25 °C ... + 55 °C
Operation temperature	- 10 °C ... + 55 °C
Allowable operation relative humidity	80 % at + 55 °C
DESIGN PARAMETES	
Ingress protection	IP 30
Dimensions (without fixings and legs) L x H x G Casing up to 16 A Casing from 32 A to 64 A	400 x 400 x 160 mm 1150 x 630 x 190 mm
Mass (without batteries) Casing up to 16 A Casing from 32 A to 64 A	< 8 kg < 40 kg

INTEROPERATION WITH OTHER DEVICES	
Certified fire-fighting dampers drives powered by 24 V DC	
Certified electromagnets (holders) for fire-fighting doors powered by 24 V DC	
POLON 4000 system fire detecting and alarm control panels: POLON 4100 POLON 4200 POLON 4500 POLON 4900 IGNIS 1000 system fire detecting and alarm control panels	
CONTROL PANEL OPERATION	
Variable, program performed depending on premises fire scenario requirements	

4 FUNCTIONALITY DESCRIPTION

4.1 General description

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

- fire (smokiness) detection;
- automatic or manual actuation of fire protection devices installed in smoke exhaust systems;
- acoustic and optical signalling of the devices operation modes (alarm, fault);
- automatic monitoring of actuation of fire protection devices (servomotors, electromagnets, ventilators, etc.) composing smoke exhaust system;
- automatic monitoring of its own modules and the panel circuits;
- basic information transmission to master control systems (e.g. the POLON 4000 system, the IGNIS 1000 system or others) about an alarm mode, faults, current fire protection and executive devices status.

The UCS 6000 control panel can work individually as single- or multi-zone universal smoke exhausting controller or in addressable detection lines/loops of the POLON 4000 system fire alarm panels.

The control panel (Fig. 4.1) is equipped with:

- the MGS-60 module (x1):

- a supervised line that receives an alarm signal from an external fire detection and alarm control panel,
 - a rain and/or wind sensor power supply line,
 - a rain and/or wind sensor signal receiving line,
 - the PKA supervised alarm relay (circuit continuity),
 - the PKU fault relay.
- the MGL-60 module (x8):
 - a conventional detection line (40 model range detectors),
 - a conventional line for manual smoke exhaust push buttons (PO-6X model range buttons),
 - a supervised main output, universal for control and power supply of fire protection devices (servomotors and fire/smoke damper drives, fire zone separators electromagnets, etc.),
 - monitoring lines to monitor the status of end contacts installed in fire protection devices, which are controlled and power supplied by the main output,
 - lines that receive signals from ventilation push buttons (OPEN, CLOSE)
 - the MPW-60 module (x4):
 - 2 programmable PK1 and PK2 relays, high voltage type (5 A / 230 V),
 - 2 supervised programmable LK1 and LK2 (24 V) monitoring lines;
 - the MPD-60 module (x1):
 - 2 supervised programmable PK1 and PK2 (1 A / 24 V) relays,
 - 2 supervised programmable LK1 and LK2 (24 V) monitoring lines;
 - the MKA-60 module (x1):
 - a communication line for POLON 4000 system (addressable detection line);
 - the MZU-60 module (x4):
 - the PKUZ (1 A/24 V) power supply fault relay,
 - a supervised output for external devices power supply (0.5 A / 24 V).

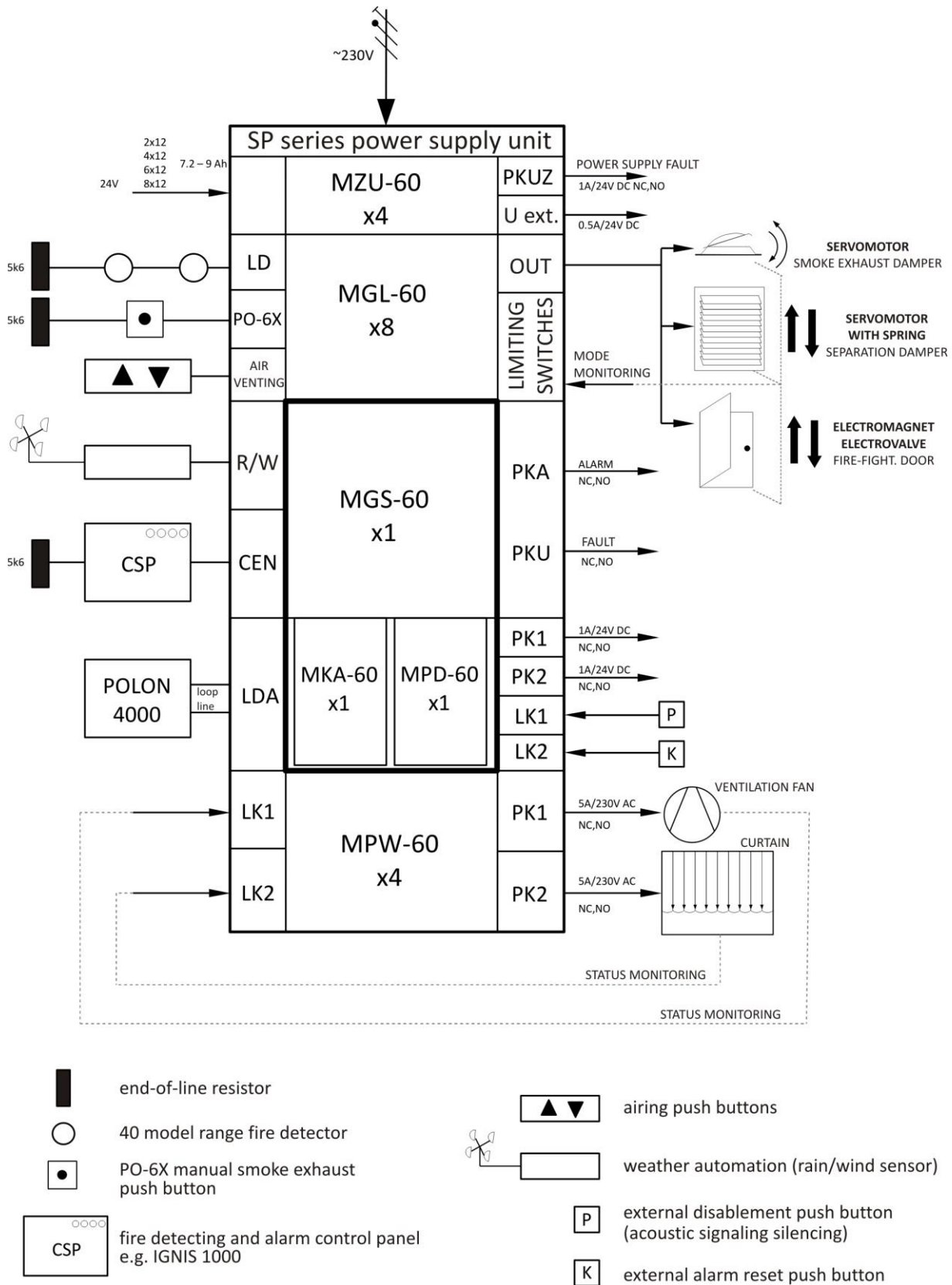


Fig. 4.1 Function bloc diagram of smoke exhausting system with UCS 6000 panel

A fire is detected by a conventional detection line with 40 model range detectors being installed. The line is able to program an alarm variant with preliminary reset (60 s) in order to eliminate accidental actuations.

In the smoke exhaust controlling section, a fire protection devices actuation is possible only as a result of:

- actuation of a detector in a conventional detection line;
- actuation of a smoke exhaust manual push button;

- an alarm signal occurrence from an external fire alarm control panel, e.g. IGNIS 1000,
- the POLON 4000 system control panel command.

Initiation of the smoke exhaust procedure – pursuantly to a programmed fire scenario for a given object – takes place upon receipt of an actuation signal. Air venting buttons are disabled and signals coming from the rain and/or wind detector are ignored.

A detailed description of particular inputs and outputs operation together with the configuration and programming process are included in points 5 and 6.

4.2 Control panel basic operation modes

4.2.1 Quiescent mode

In a quiescent (supervision) mode only a green indicator DOZOROWANIE is lit on the PO-6x model range manual smoke exhaust buttons connected to the MGL-60 module, what signals an activation and proper operation of the modules (of the control panel).

The control panel MPD-60 and MPW-60 modules execution relays are inactive excluding the PKU (MGS-60) general fault relay which is an active mode (NO position).

4.2.2 Daytime airing function

The quiescent mode enables performance of daytime airing – ventilation executed using windows and ventilation dampers.

In case the MGL-60 module main output is programmed in **OPERATION MODE 1** (a drive or two-direction actuator), it is possible to open and close the windows and ventilation dampers with air venting push buttons.

The air venting push buttons can work in two modes:

1 – as long as the button is pressed – opening or closing of the windows and ventilation dampers;

2 – the button single push – complete opening or closing of the windows and ventilation dampers.

Additionally it is possible to set airing time parameters (point 6.2):

Tp1 - window or damper opening time (button mode 2),

Tp2 – time of automatic complete closing of the window or ventilation damper (button mode 1 and 2).

A detailed description of the airing buttons connection and programming is included in points 5.3.5 and 6.2.

The daytime ventilation process can be additionally supported by weather automation.

In case, after a rain and/or wind detector connecting and programming, unfavourable weather conditions occur (too strong wind or heavy rain), the MGL-60 modules opening buttons are disabled.

If a window or damper is open for daytime ventilation, they automatically close when a rain or wind signal is received. In the case of fire alarm occurrence, the rain and/or wind sensor signal is disabled. In the case of mains basic power supply outage, the airing push buttons are also disabled and it is only possible to close once the dampers or windows that are already opened.

4.2.3 Alarming – fire protection devices actuation

When a fire danger or smokiness is detected (detectors in alarm mode, actuated manual smoke exhaust push button, external alarm, command from the POLON 4000 control panel), a fire alarm is indicated in the UCS 6000 control panel.

The alarm is signalled with a flashing light of the **FIRE** indicator in the PO-6X model range manual smoke exhaust push buttons.

The **OK** indicator in the PO-6X model range manual smoke exhaust push buttons is turned off.

The PKA alarm relay is activated. The weather automation and the MGL-60 module air venting push buttons are disabled.

The control panel internal acoustic signalling is switched on (if it is active – see point 5.2), which can be silenced with the internal **ACKNOWLEDGEMENT** push button located on the MGS-60 module or with the external **ACKNOWLEDGEMENT** push button (points 5.5.1 and 6.4). Upon acknowledgement, the **FIRE** indicator is lit permanently. After each new alarm from another source (e.g. external alarm after an alarm from a detector) the

flashing **FIRE** indicator switches once more and the control panel internal acoustic signalling triggers but it can be silenced again.

Once the UCS 6000 control panel enters a fire alarm state, an automatic smoke exhausting procedure is initiated pursuant to a programmed scenario (e.g. actuation with appropriate T1, T2, T3 time parameters of the MGL-60 main module outputs (points 5.3.3 and 6.2). The modules are connected, among other devices, with smoke exhaust dampers, activation of the PK1 and PK2 programmable relays of the MPW-60 modules (points 5.4.1 and 6.3) and the MPD-60 modules (5.5.1 and 6.4) that control ventilators, air curtains and so on.

To minimize warning devices false activation probability, the control panel is furnished with an option to settle a variant with initial detector signal reset.

In this variant the control panel automatically clears the first detector actuation without triggering an alarm mode. A renewed detector activation results in a fire alarm evoking. If the detector in a detection line is not actuated again within 60 s, the control panel treats the previous actuation as false and returns to the quiescent mode as before the first activation. The manner of switching over the MGL-60 modules detection lines to the above variant is described in points 5.3.1 and 6.2.

The UCS 6000 control panel alarm mode reset and return to a quiescent mode can be achieved:

- using the internal **RESET** push button placed on the MGS-60 module,
- using the **RESET** push buttons inside the PO-62 and PO-63 manual smoke exhaust push buttons,
- using the external **RESET** push button (points 5.5.1 and 6.4),
- at the POLON 4000 system control panel.

Such reset is only effective when there is no fire factor in the automatic fire warning devices vicinity, no external alarm signal and no FIRE signal from a manual smoke exhaust button.

4.2.4 Fault

Any detected fault is signalled optically and acoustically.

Optically a fault is signalled by:

- flashes of the **FAULT** collective diode located on the MGS-60 module, which indicate faults within the entire smoke exhaust installation,
- flashes of the **FAULT** diode located on the PO-6x smoke exhaust manual button connected to the first MGL-60 module and configured for collective signalling (points 5.3.2. and 6.2),
- flashes of the **FAULT** diode located on the PO-6x smoke exhaust manual buttons connected to the MGL-60 modules (points 5.3.2. and 6.2), which indicate faults within a given module installation.

A damage is signalled acoustically by a repeated signal of the internal acoustic signalling device (MGS-60).

The acoustic signal can be silenced with the internal **ACKNOWLEDGEMENT** button located on the MGS-60 module or with the external **ACKNOWLEDGEMENT** button (points 5.5.1 and 6.4). After conformation, the **FAULT** signalling diode is lit steadily.

A fault optical and acoustic signalling reset is executed automatically after the fault removal.

The smoke exhaust system fault readout is possible using an application for the UCS 6000 controller configuration (*UCSKonfigurator*).

5 CONNECTING EXTERNAL CIRCUITS

5.1 General information

The UCS 6000 control panel modules are fitted with a range of universal inputs and outputs in order to connect external smoke exhaust installations. The operation mode of the inputs and outputs along with the time criteria is programmed with the use of the application for the UCS 6000 controller configuration (*UCSKonfigurator*) – point 6.

All electric connections should be done in accordance with applicable regulations regarding fire and mechanical resistance, and observing all parameters (resistance) specified in table 3.1 point 3.

Electric connections can be executed using unscreened wires except for the wire that connects the UCS 6000 control panel with the POLON 4000 system control panel (YnTKSYekw 1 x 2 x 0.8 mm installation wire is recommended).

5.2 MGS-60 module

The MGS-60 main controller module (fig. 5.2) enables monitoring and controlling remaining control panel modules, and contains one MGL-60 group-line module— marked with number 1.

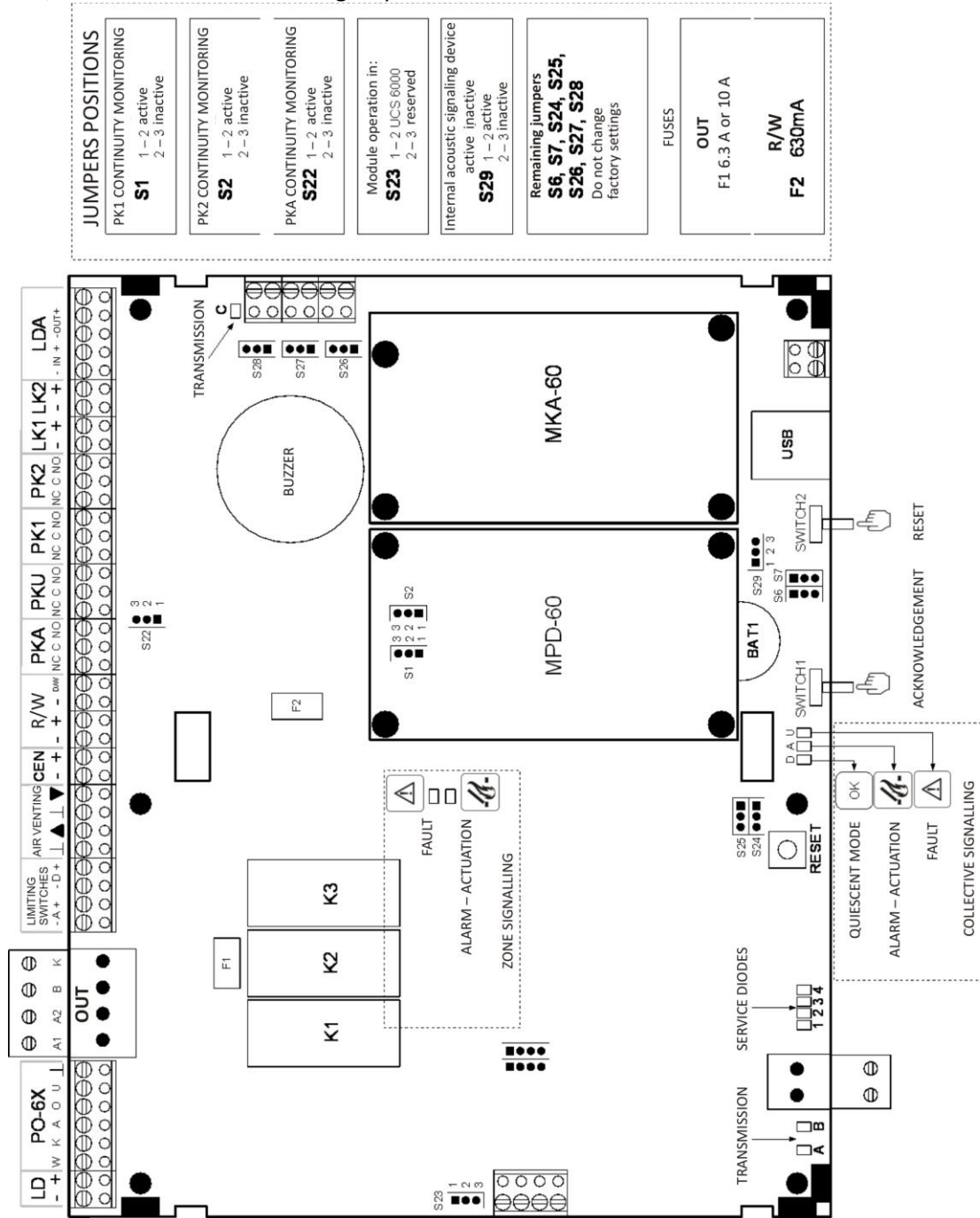


Fig. 5.2 MGS-60 module

5.2.1 External alarm input

The UCS 6000 control panel enables to receive a 'certain' external alarm from another fire protection system, e.g. IGNIS 1000. Co-operation with an external fire alarm system is set as described in point 6.1.

The initiating signal external line is connected to the MGS-60 module terminals marked with **-CEN+** (fig. 5.2.1). The K contact actuation by an external fire alarm control panel initiates the UCS 6000 panel automatic smoke exhaust and alarming procedure as described in point 4.2.3.

In the event of a short circuit or a line break, the control panel signals a fault as described in point 4.2.4.

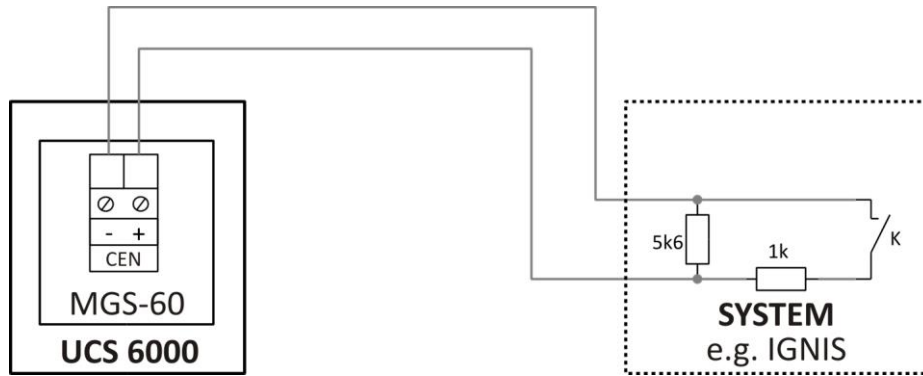


Fig. 5.2.1 UCS 6000 control panel connection with external fire detecting and alarm system

5.2.2 Rain/wind (R/W) sensor

An external rain and/or wind sensor power supplied by 24 V DC can be connected to the UCS 6000 control panel. In this way, it is possible to make air venting additionally conditional upon external weather conditions.

The sensor power supply is connected to the MGS-60 module **R/W - +** terminals and is secured by the F2 fuse (630 mA). The sensor power consumption should not exceed 0.5 A.

The sensor signal should be routed to the terminals marked as **R/W (⊥R/W)**.

The rain and/or wind sensor connection to the UCS 6000 control panel is presented in Fig. 5.2.2.

In order to actuate the sensor it is necessary to program weather automation (points 6.1 and 6.2).

In the event of strong wind or heavy rain, air venting is disabled.

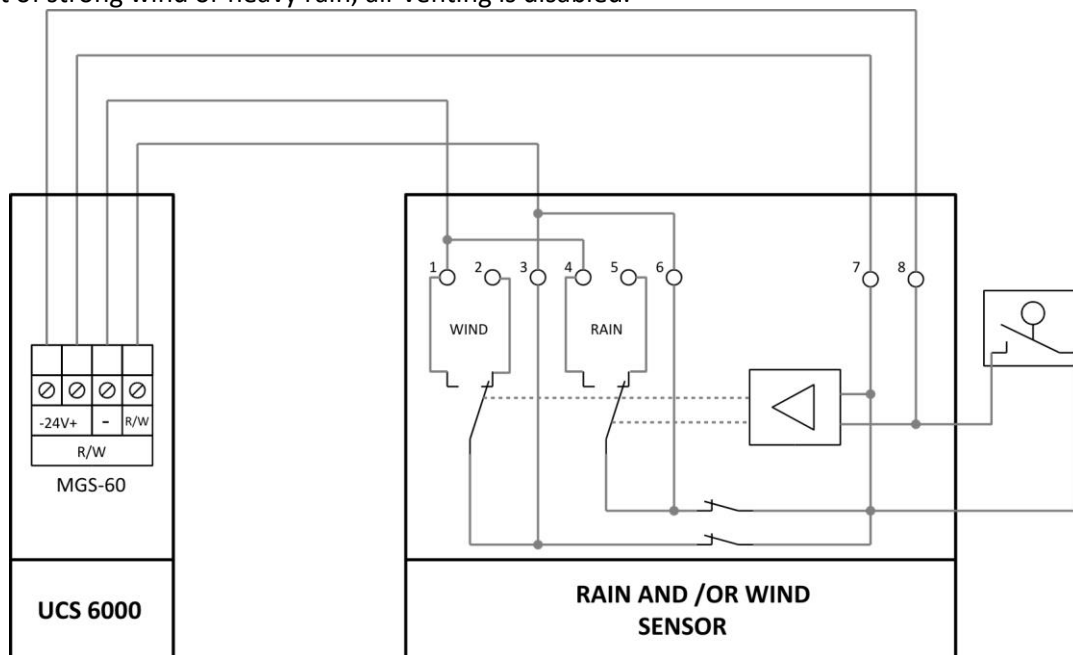


Fig. 5.2.2 Exemplary connection of rain/wind sensor to UCS 6000 control panel

5.2.3 PKA alarm relay and PKU fault relay

The MGS-60 module is equipped with two non-potential relay outputs:

- a supervised PKA alarm output (supervised in the state of no reaction to a short circuit or break in the relay output line),
- a non-supervised PKU fault output.

The PKA relay output will be supervised if the line continuity monitoring is programmed during the relay programming (point 6.1).

The output will be supervised properly if in a supervision mode the external device connected to this output is powered by voltage ranging between 6 and 30 V, and the **S22** jumper is set in the **1 - 2 ACTIVE** position. In the case of voltage outage on the PKA relay output NO clamp, the control panel signals an output fault.

An exemplary solution for the relay output supervision is illustrated in Fig. 5.2.3.

The PKU fault relay has a reverse notation when compared with the remaining relays; the **C-NO** position is the relay normal state (no fault). Any fault (also the control panel switch off) is signalled by the relay **NC-C** position.

Note — the line continuity monitoring circuit draws about 0.5 mA current from an external device connected to the PKA relay output. If power consumption from the external device is not recommended, the line continuity monitoring circuit should be program disabled declaring lack of output monitoring and the **S22** jumper should be placed in **2 – 3** position.

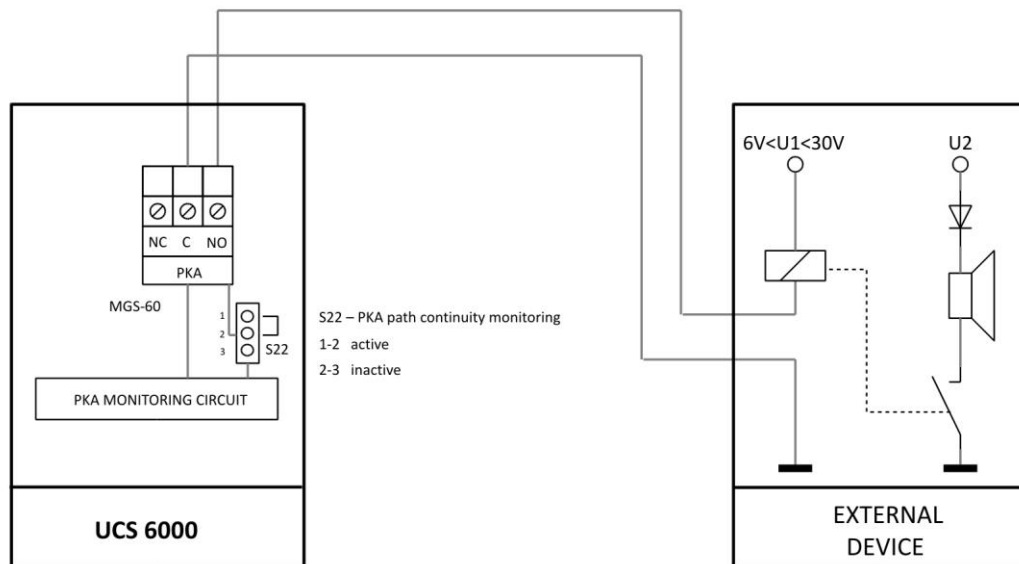


Fig. 5.2.3 Exemplary use of PKA alarm relay with output continuity monitoring

5.3 MGL-60 module

The MGL-60 group-line module (fig. 5.3) enables power supplying and controlling fire protection devices supplied with 24 V DC. It provides the daytime air ventilation function execution. The control panel can be fitted with up to 8 MGL-60 modules (7 + 1 module embedded in MGS-60). The module address is settled with the use of the SW1 rotating switches. The SW10 value should be set at 0.

5.3.1 Detection line

The MGL-60 modules of the UCS 6000 control panel are fitted with a conventional detection line. The conventional line is programmed as described in point 6.2.

To minimize warning devices false actuation probability, the control panel is furnished with an option to settle a variant with preliminary reset of the signals of the detectors installed in the line.

In this variant the control panel automatically clears the first detector actuation without triggering an alarm mode. A renewed detector actuation results in a fire alarm evoking. If the detector in a detection line is not actuated again within 60 s, the control panel treats the previous actuation as false and returns to the supervision mode as before the first actuation.

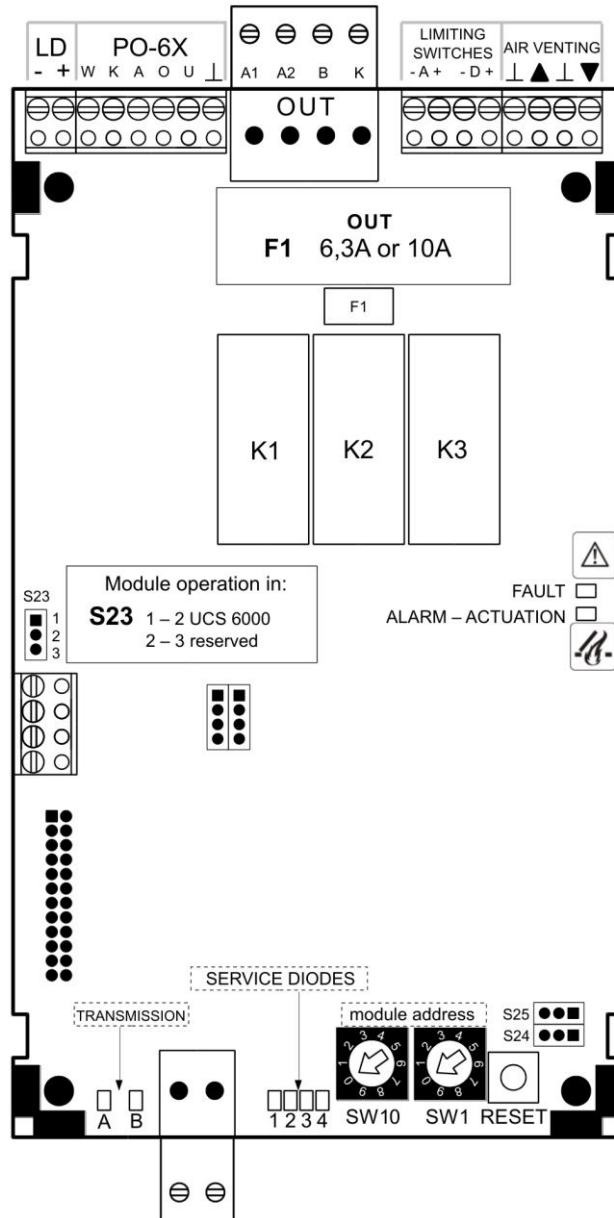


Fig. 5.3 MGL-60 module

The way of warning devices connection to the control panel is illustrated in fig. 5.3.1.

At the end of the conventional line an end-of-line $5.6 \text{ k}\Omega \pm 5 \%$, 0.5 W resistor should be installed. If the conventional line is not used, the end-of-line resistor should be connected to the MGL-60 module line terminals in the control panel (- LD +) and the line declaration should be deleted (point 6.2).

In the event of the detection line short circuit or break, the control panel signals a fault as described in point 4.2.4.

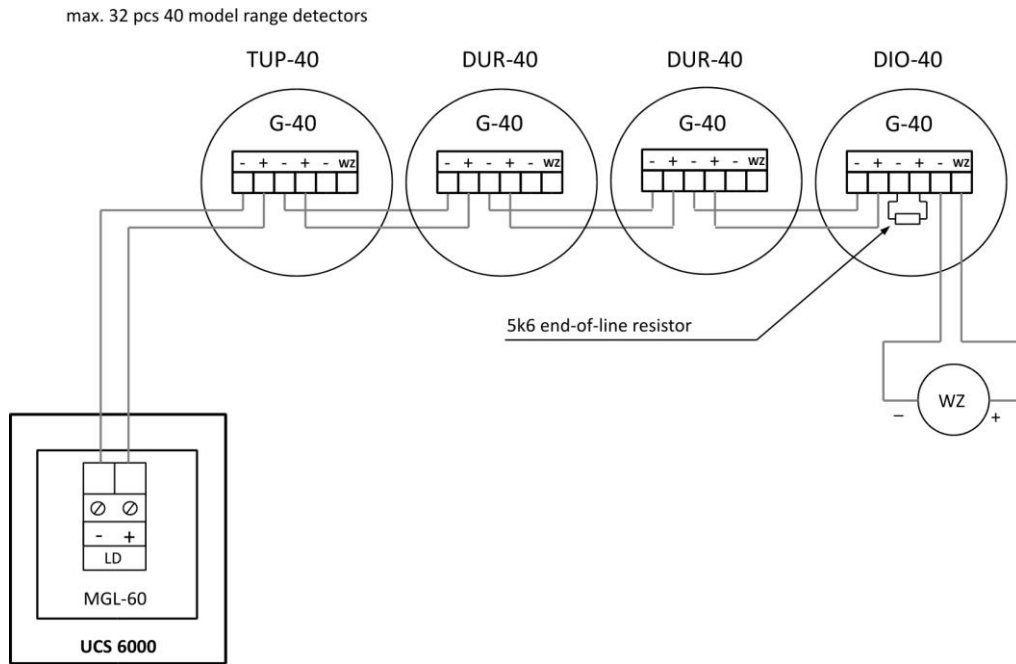


Fig. 5.3.1 40 model range detectors connection to MGL-60 module of UCS 6000 control panel

5.3.2 Smoke exhaust button

The UCS 6000 control panel up to 8 PO-6X external smoke exhaust manual push buttons can be connected in parallel to the UCS 6000 control panel (fig. 5.3.2).

The PO-61 push buttons are equipped with a **FIRE** switch and a **FIRE** signalling diode (red colour).

The PO-62 push buttons are equipped with two switches: **FIRE** and **RESET** and with a **FIRE** signalling diode (red colour).

The PO-63 push buttons are equipped with two switches: **FIRE** and **RESET** and with the following signalling diodes: **QUIESCENT** (green colour), **FIRE** (red colour), **FAULT** (yellow colour).

A line containing smoke exhaust manual push buttons is programmed pursuant to point 6.2.

In the last push button (at the end of a line) end-of-line 5.6 kΩ ± 5 %, 0.5 W resistors should be left on the FIRE and RESET lines; in all remaining buttons end-of-line resistors should be removed.

A short circuit or breaks in the FIRE and RESET lines are signalled in the control panel as a fault.

The **FIRE** button use results in an actuation of the UCS 6000 control panel automatic smoke exhaust and alarm signalling procedure as described in point 4.2.3.

The **RESET** button use results in an alarm mode cancellation (point 4.2.3) and the UCS 6000 control panel return to a quiescent (supervision) mode (point 4.2.1).

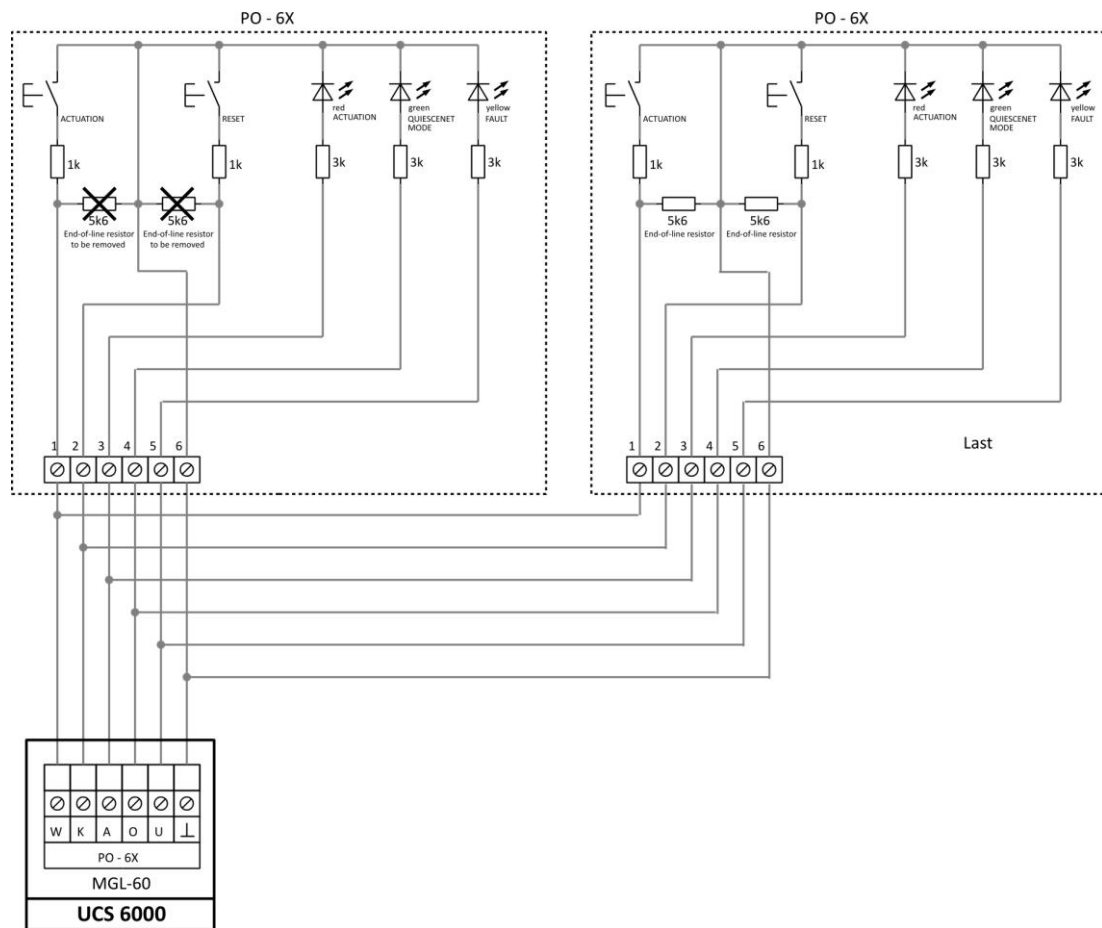


Fig. 5.3.2 PO-6X manual smoke exhaust push buttons connection to UCS 6000 control panel

5.3.3 Fire-fighting devices output

The main function of the UCS 6000 control panel (besides detecting fire danger) is controlling and power supply of executive fire-fighting devices, such as various dampers and fire windows (equipped with actuators or servomotors), fire zone separators (electromagnets), etc.

Those devices are controlled and powered by the dedicated main relay output located on the MGL-60 module. The main relay output is of multi-purpose type and can be programmed for three operation modes – with appropriate time parameters (point 6.2).

Additionally, monitoring of power supply continuity (5.6 kΩ end-of-line resistors) and end-of-line switches status can be programmed for all fire protection devices controlled and supplied by the main output.

Due to a variety of power supply and control of servomotors and electric fire protection device drives, in addition to output operation modes, double wire or triple wires controlling of two-direction servomotors in **OPERATION MODE - 1**, was implemented.

The two-wire servomotors control means that the servomotor, drive is controlled (rotation direction is changed) by two wires through a change of the servomotor power supply voltage polarisation. Three-wire control means that the servomotor, drive is controlled (rotation direction is changed) by three wires through switching over voltage between the wires (Fig. 5.3.3.1.1.1 and 5.3.3.1.1.2).

The external dampers and fire windows may freeze up in unfavourable weather conditions. The UCS 6000 control panel MGL-60 module enables programming of the 'deadlock' function, i.e. a function to force the OPERATION MODE - 1. The forcing function can be applied when T2 is equal to 0 (point 6.2).

If the forcing function is declared after the main output actuation in an alarm mode, the servomotors (drives) are cyclically and temporarily switched over in 2-minute intervals during the period of 30 minutes.

In case self-braking servomotors or drives (with overload switches) are used, in **OPERATION MODE - 1** it is possible to program switching off power supply and the servomotor control once the edging position is reached (point 6.2).

5.3.3.1 Operation modes of output to fire protection devices

5.3.3.1.1 OPERATION MODE - 1

The OPERATION MODE - 1 mode is designed for fire protection devices equipped with two-direction electric servomotors (drives) controlled in a two- or three-wire way and powered by 24 V DC. The servomotors of this kind are utilised in dampers and smoke exhausting and ventilating windows. The connection of a servomotor controlled in a two- and three-wire way is illustrated in figures 5.3.3.1.1.1 and 5.3.3.1.1.2.

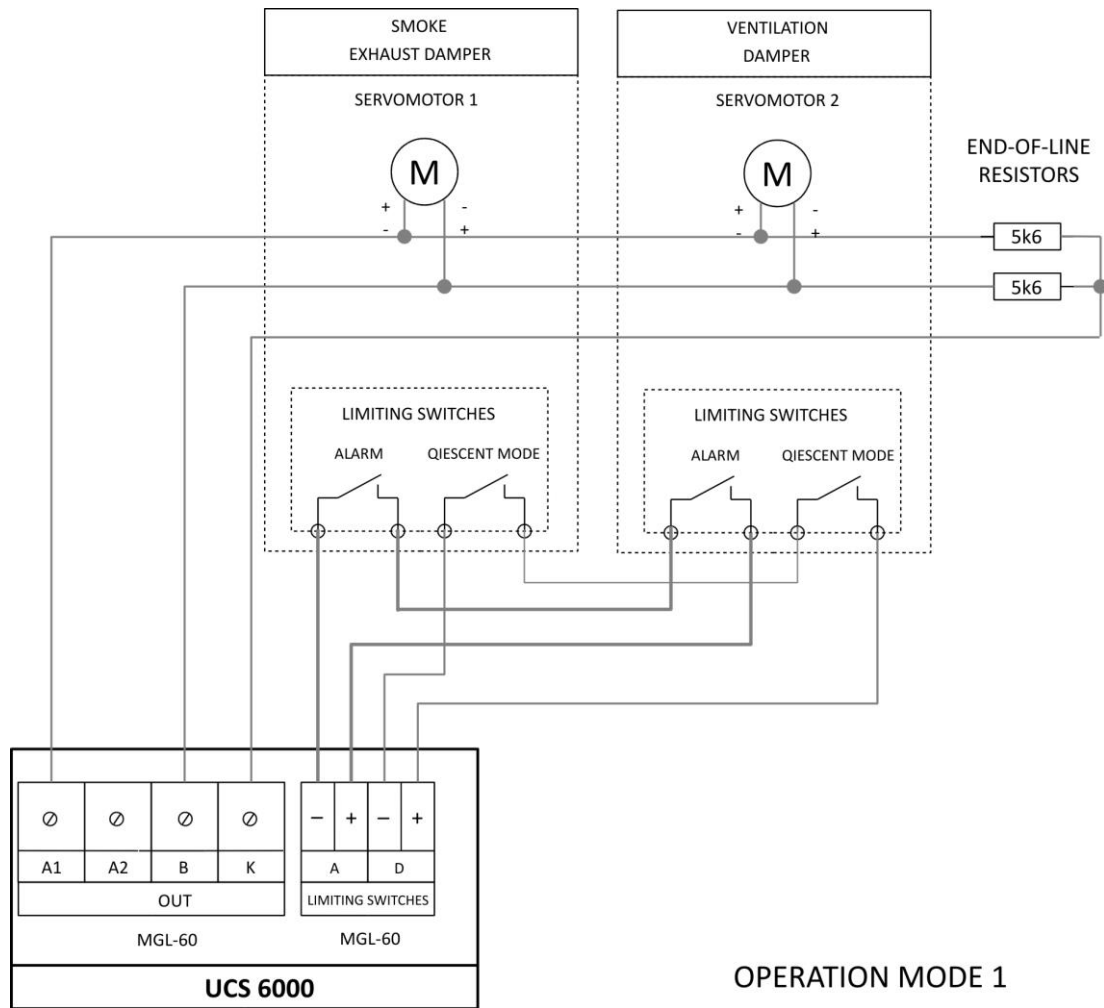


Fig. 5.3.3.1.1.1 Two-wire controlled servomotor connection in OPERATION MODE-1

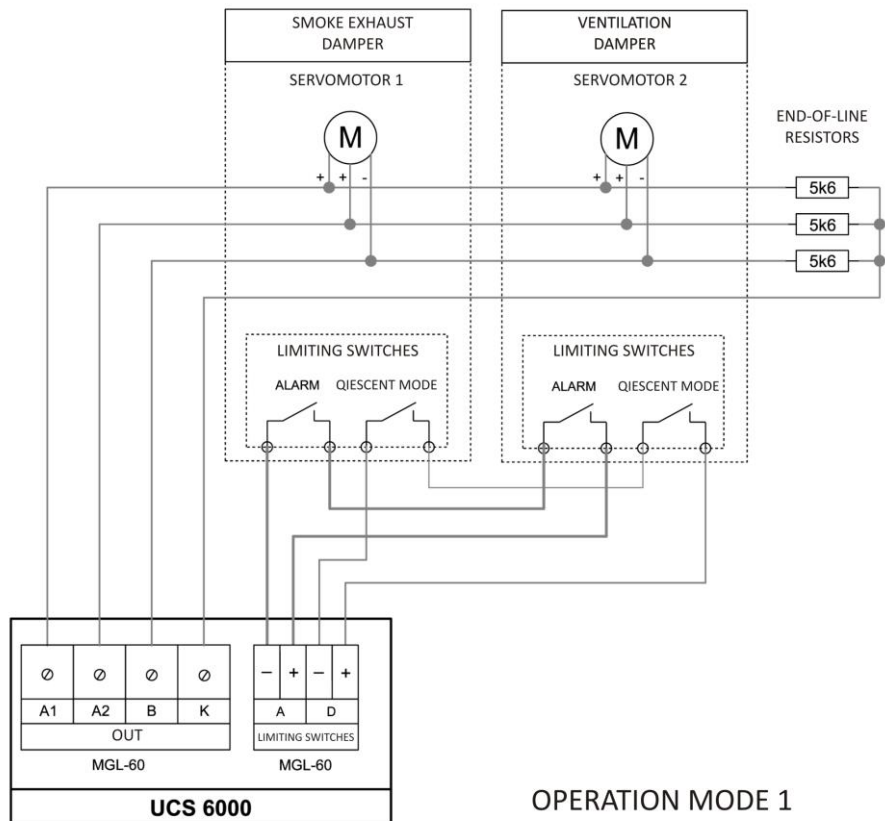


Fig. 5.3.3.1.1.2 Three-wire controlled servomotor connection in OPERATION MODE-1

5.3.3.1.2 OPERATION MODE - 2

The OPERATION MODE - 2 mode is designed for fire protection devices equipped with 24 V electric servomotors (drives) with a spring.

This type servomotors are used in fire-fighting separation dampers. The servomotor with a recurring spring sets the damper in the working position (SUPERVISE position) stretching the recurring spring. After stopping, the servomotor is still live until the power supply is cut off (alarm or fault). The energy collected in the stretched spring automatically sets the damper in a safe, i.e. ALARM, position.

The servomotor connection way is illustrated in Fig. 5.3.3.1.2.

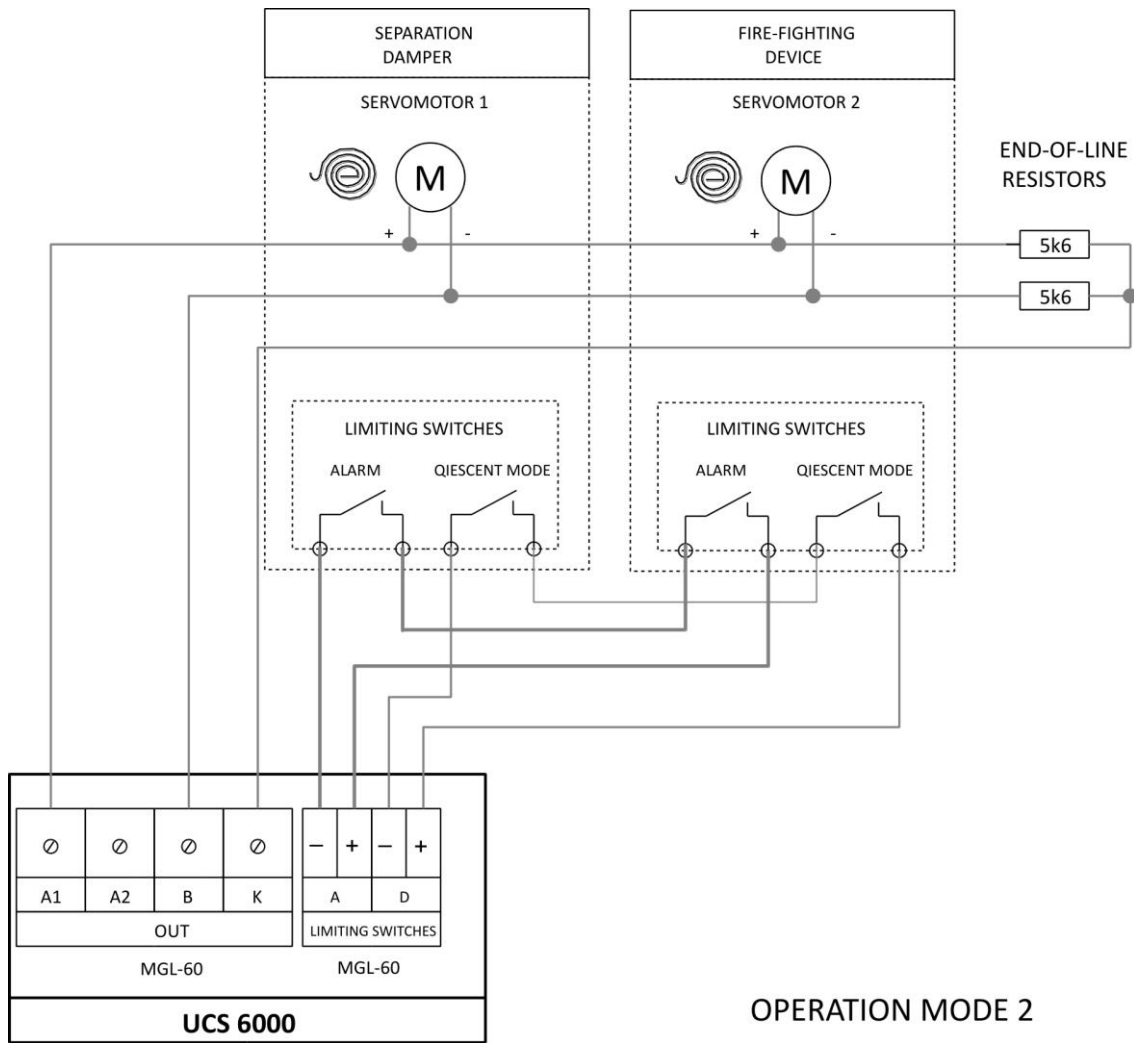


Fig. 5.3.3.1.2 Connection of servomotor with spring in OPERATION MODE -2

5.3.3.1.3 OPERATION MODE - 3

The OPERATION MODE - 3 mode is designed for fire protection devices controlled by a current break or current impulse, which are fitted with electromagnets or electrovalves powered by 24 V DC.

A current break – control of this type is commonly used in fireproof door systems (normally they are open - held by an electromagnet; while during an alarm, a current interruption occurs in the electromagnet circuit and the door is closed).

A current impulse – control of this type is used in the systems of fire isolations or separations (normally they are closed/open – during an alarm, the electromagnet (or electrovalve) is triggered by a current impulse and the separations are opened/closed).

The output programming in the OPERATION MODE - 3 mode, together with time parameters, should be performed in accordance with point 6.2.

The way of connection the electromagnet controlled by a current break or current impulse is illustrated in Fig. 5.3.3.1.3.

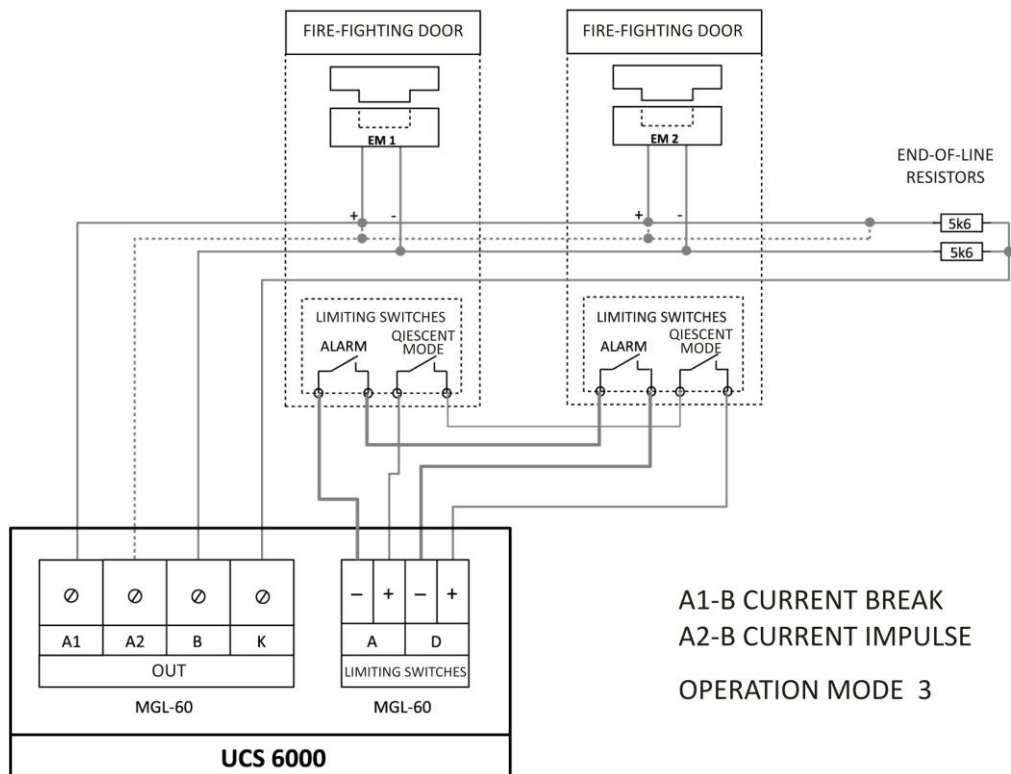


Fig. 5.3.3.1.3 Connection of electromagnets controlled by current break or impulse in OPERATION MODE - 3

5.3.4 Limiting switches

In the case of power supply and control of fire protection devices (drives and servomotors, electromagnets) with the use of the main output, it is possible to control the status (location) of those devices. This is achieved by the monitoring of the status of dedicated inputs (LIMITING SWITCHES – A, D) of the MGL-60 modules, which are connected to the contacts of limiting switches of the monitored devices.

It is possible to check only the status of the limiting switches (clenched or open) or additionally continuity of the line containing the limiting switches regarding their clenched or open position.

The figures in point 5.3.3 illustrate the limiting switches checking regarding their contacts clenched or open position.

The figure 5.3.4 presents exemplary connection of the limiting switches at complete monitoring status (clenched contact, open contact, continuous line, line break). Monitoring (status and continuity) of the limiting switches is programmed in accordance with point 6.2. In the case of limiting switches line continuity programming it is necessary to programme the status monitoring; otherwise the control panel reports a fault of improper configuration.

Declaration of the limiting switches line continuity monitoring precludes connection of a higher number of fire protection devices to the main output. If the main output is to supply and control more than one fire protection device fitted with limiting switches, the limiting switches line continuity monitoring should be disabled.

Note - It is recommended to connect one fire-protection device with limiting switches to the main output of the UCS 6000 control panel MGL-60 module to obtain full supervision over the fire protection device.

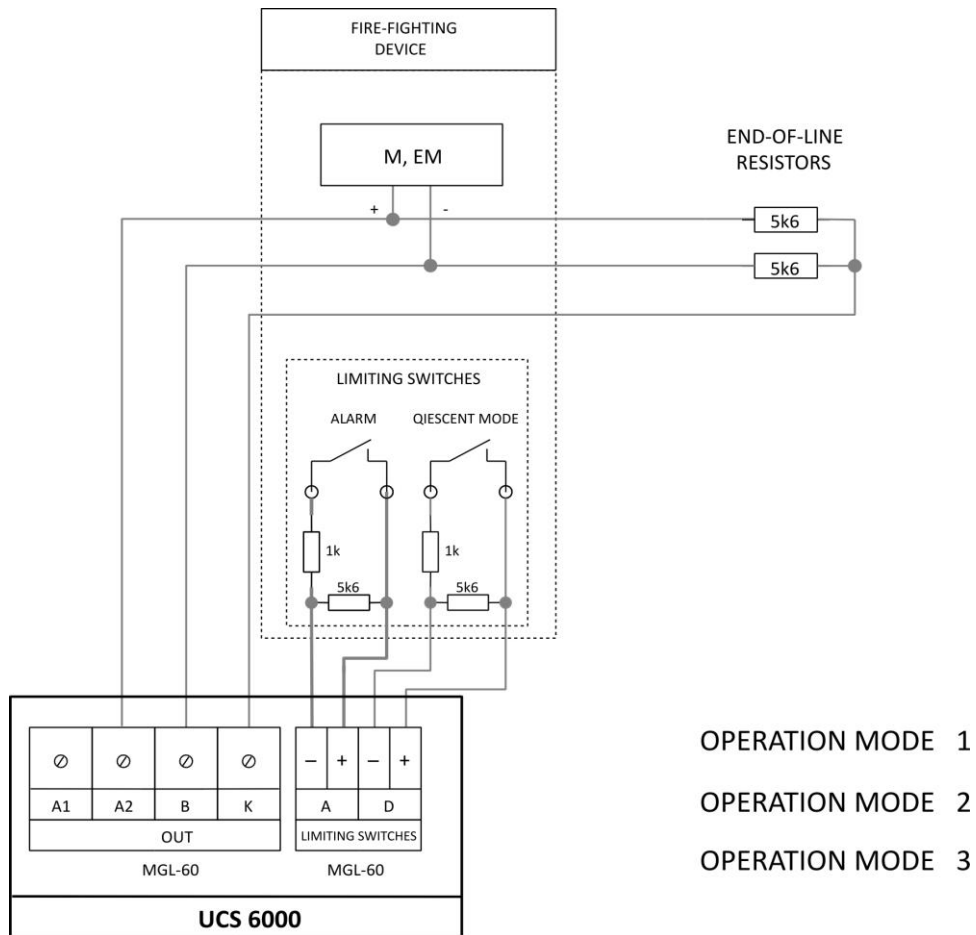


Fig. 5.3.4 Connection of limiting switches with complete monitoring status

5.3.5 Airing buttons

The UCS 6000 control panel enables daytime air ventilation. Airing is possible only in case the output is programmed in the **OPERATION MODE - 1** (points 5.3.3.1.1 and 6.2).

The window or venting damper are controlled (opening and closing) by the airing buttons connected to the MGL-60 module terminals marked as **AIRING** Fig. 5.3.5 (OPEN $\perp \blacktriangle$; CLOSE $\perp \blacktriangledown$).

The buttons operation can be programmed as described in point 6.2. For each MGL-60 module air venting is carried out separately. Only the rain/wind sensor is common (point 5.2.2).

As long as the OPEN (CLOSE) button is pressed in the airing **mode 1**, windows or dampers are being opened (closed) and it is possible to lift (set) the window or damper in any position.

Additionally, it is possible to set the **Tp2** time of automatic closing of the windows or venting dampers.

A single press of the OPEN (CLOSE) press button in **mode 2** results in the windows and venting dampers opening (closing).

This mode additionally enables air venting time parameters setting:

- **Tp1** opening time of the windows or venting dampers,
- **Tp2** automatic closing time of the windows or venting dampers.

Instead of air venting buttons in **mode 2**, it is possible to connect to the MGL-60 module an external programmable controlling clock with two OPEN and CLOSE contacts (fig. 5.3.5). In this way it is possible to perform an independent airing control which can be additionally supported by the weather automation (rain and/or wind sensor – point 5.2.2).

In the event of a fire alarm, the air venting buttons are disabled.

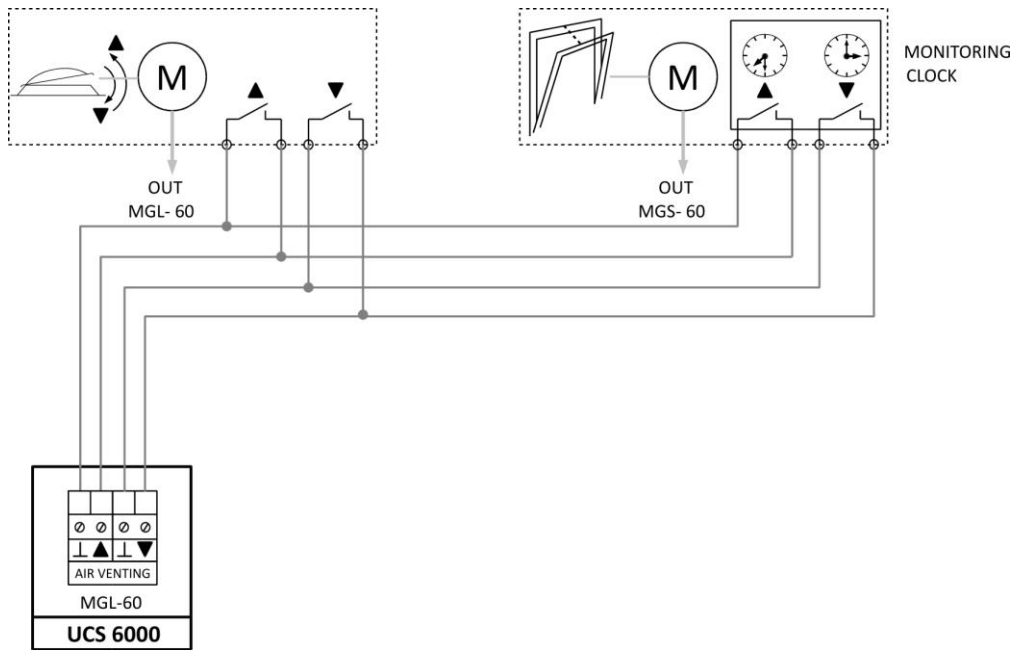


Fig. 5.3.5 Connection of air venting push buttons or ventilation controlling clock to UCS 6000 MGL-60 modules

5.4 MPW-60 module

The MPW-60 high-voltage relays module (fig. 5.4) provides 230 V AC fire protection devices control using the PK1 and PK2 relays. Moreover, with the use of monitoring line inputs, it is possible to monitor the status of fire protection devices which are controlled by the PK1 and PK2 relays. The maximum number of MPW-60 modules in the control panel is 4. The module address is set using the SW1 rotating switches. The value of the SW10 switch should be set at 0.

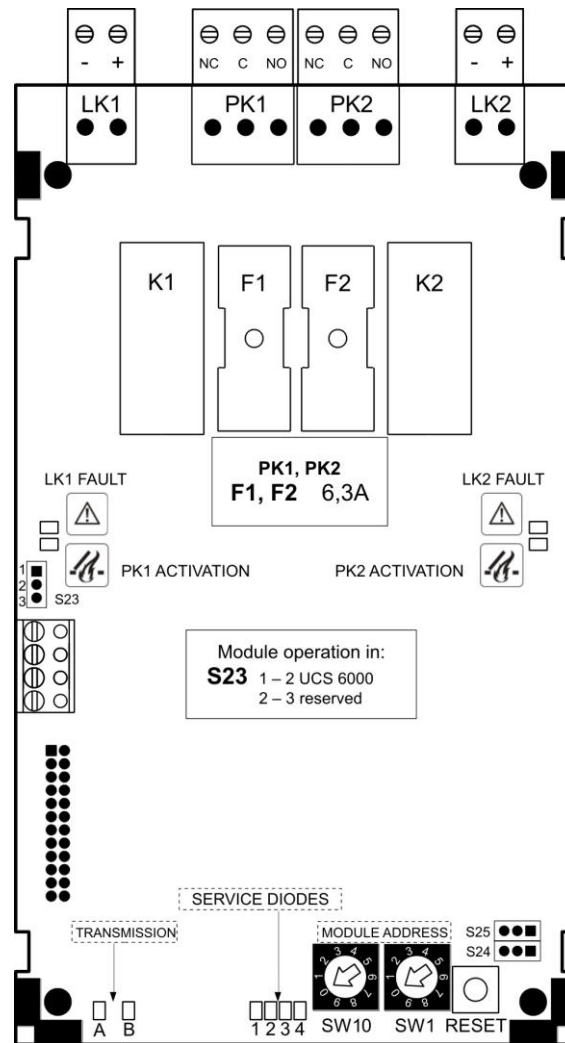


Fig. 5.4 MPW-60 module

5.4.1 PK1 and PK2 relays, LK1 and LK2 monitoring lines

The non-potential programmable PK1 and PK2 relays can be utilise to control (turn on and off) the smoke exhaust installation executive devices, including air supply and exhaust fans (as required), smoke curtains and blinds as well as fire separators. An example of the PK2 relay use along with actuation confirmation using the LK2 monitoring line is presented in fig. 5.4.1.

The PK1 and PK2 relays output lines are additionally secured by a melting 6.3 A/250 V fuse.

In addition, time dependency can be programmed for the PK1 and PK2 relays (detailed description is contained in point 6.3).

While programming the relay actuation monitoring (confirmation), it is also possible to set the actuation confirmation time. In the case of lack of confirmation within the programmed time, the UCS 6000 control panel reports a fault. If the UCS 6000 control panel interoperates with the POLON 4000 system control panel, the latter shall indicate additionally relevant technical alarm message (in a supervision and alarm mode) or a non-maskable fault (in an alarm mode).

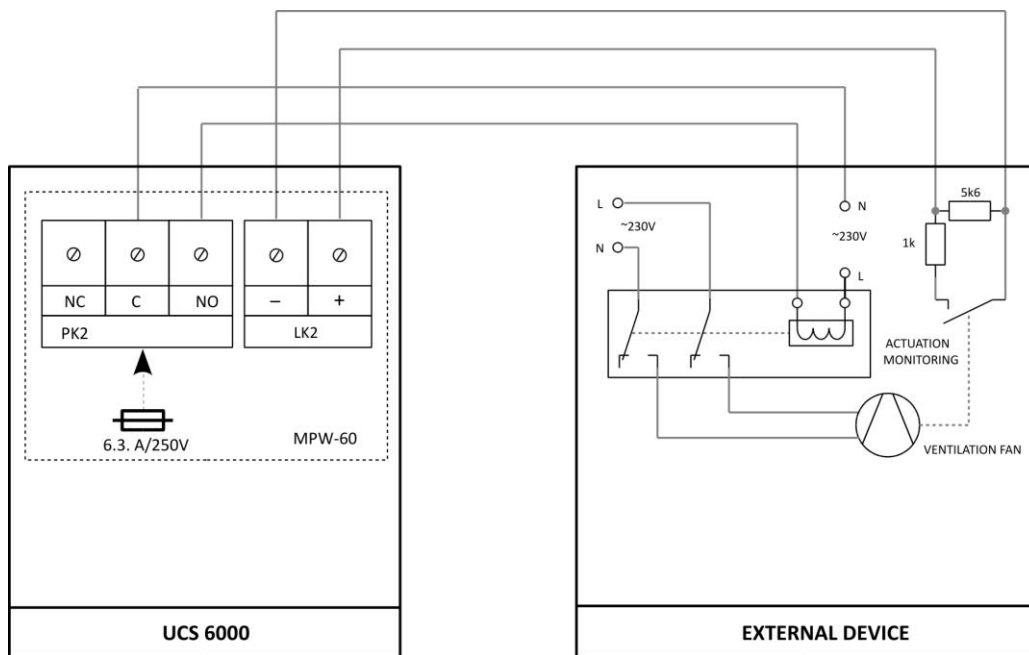


Fig. 5.4.1 Exemplary use of PK2 relay with actuation monitoring

5.5 MPD-60 module

The MPD-60 module of additional relays (fig. 5.2) makes it possible to control fire-fighting devices with the use of the PK1 and PK2 low-voltage relays with the contact load at 1 A/24 V. The state of devices controlled through the PK1 and PK2 relays can be monitored by the LK1 and LK2 monitoring lines input.

5.5.1 PK1 and PK2 relays, LK1 and LK2 monitoring lines

The PK1 and PK2 non-potential supervised relays can be used to control (turn on and off) actuators of the smoke exhaust installations, including air supply and exhaust fans (as required), curtains, smoke blinds and fire isolations. Fig. 5.5.1.1 presents an example of use of the PK2 relay along with actuation confirmation using the LK2 monitoring line and the output line continuity monitoring.

It is additionally possible to programme time dependency for the PK1 and PK2 relays (detailed programming description is contained in point 6.4).

In the case of the output lines continuity monitoring programming, the module MPD-60 **S1** and **S2** jumpers should be set properly (fig. 5.5.1.1).

While programming monitoring (confirmation) of the relays actuation, it is possible to additionally set the time for the actuation confirmation. In the case of lack of confirmation within the programmed time, the UCS 6000 control panel reports a fault. If the UCS 6000 control panel interoperates with the POLON 4000 system control panel, the latter additionally displays relevant technical alarms messages (in quiescent and alarm mode) or non-maskable fault messages (in an alarm mode).

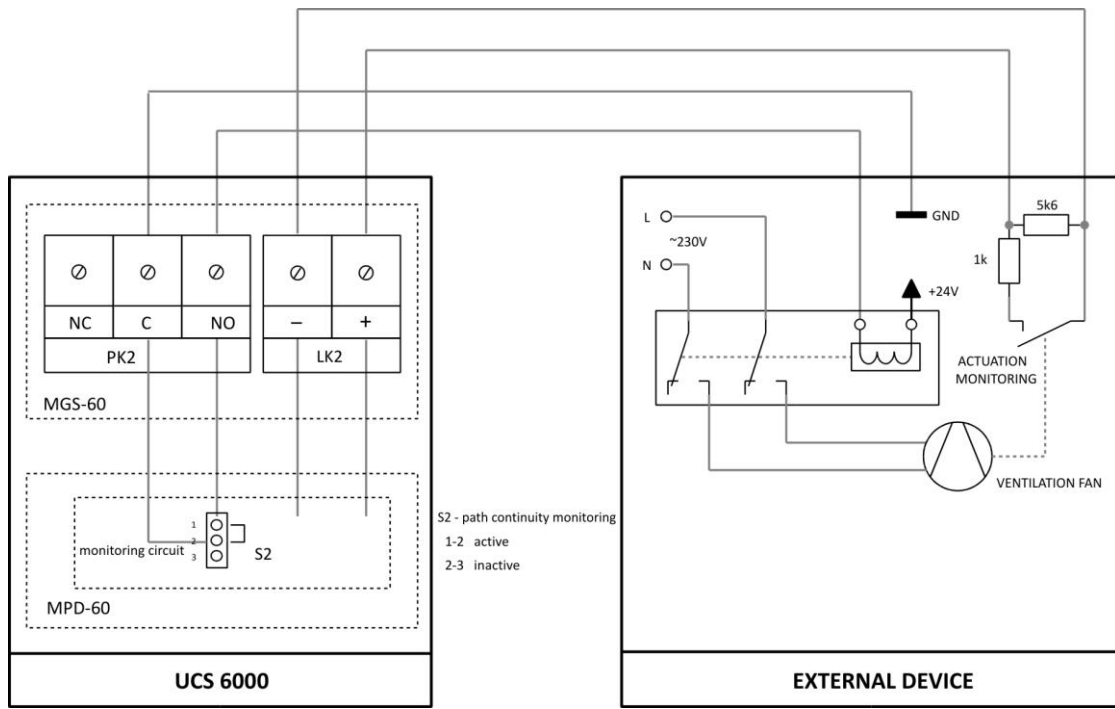


Fig. 5.5.1.1 Exemplary use of PK2 relay with actuation monitoring

The LK1 and LK2 monitoring inputs can be also used to connect (fig. 5.5.1.2):

- external confirmation button (silencing of internal alarm acoustic signalling and the UCS 6000 fault),
- external button resetting an alarm mode.

It should be noted that the LK1 and LK2 monitoring inputs usage as an external input of the push button for confirmation or reset enables this input use to confirm the the PK1 and PK2 relay actuation.

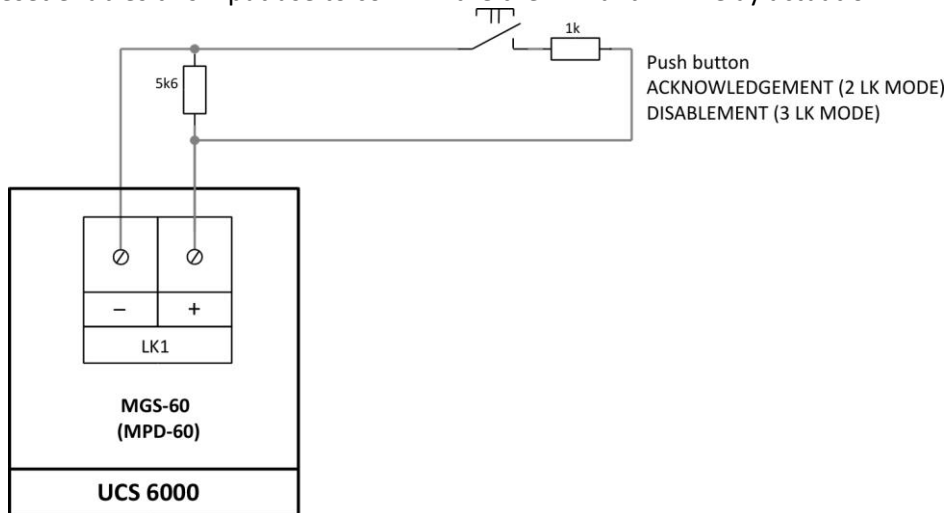


Fig. 5.5.1.2 ACKNOWLEDGEMENT and RESET push buttons connection to LK1

5.6 MKA-60 module

The UCS 6000 control panel can be installed and be operated in addressable detection lines/loops of the POLON 4000 system detecting and alarm control panels. Interoperation of the UCS control panel with the POLON 4000 system is performed through the MKA-60 addressable communication module (fig. 5.2).

While installing the UCS control panel in the detection line, reasonable attention should be paid on the UCS panel power consumption from the detection line. The maximum power consumption amounts to 0.6 mA. Interoperation of the UCS control panel with the POLON 4000 system should be declared in accordance with point 6.5.

For the UCS 6000 control panel connection to the POLON 4000 system it is recommended to use the **YnTKSYekw 1 x 2 x 0.8 mm** installation wire (parameter requirements for the detection line are included in the POLON 4900 control panel Operation and Maintenance Manual (ID-E270-011E)).

The wires of the detection line are connected to the terminals marked **LDA -WE+ and -WY+** in the MGS-60 module. The screen of the detection line should be grounded (connection to the case) in the POLON 4000 system control panel. In the UCS 6000 control panel, the screens of the input and output wires of the detection line should be connected to the dedicated **E** terminal with a 4.7 nF/2000 V !!!!! condensation (fig. 5.6.1 and 5.6.2).

The MKA-60 communication module is fitted with short circuit isolators. Moreover, the UCS 6000 turn off does not cause the detection line continuity break.

The communication interface is galvanically isolated hence it is possible to power the UCS 6000 control panels connected to the same detection line from various power sources (with different earth potential).

A detailed description of the POLON 4000 control panels configuration and programming for work with the UCS 6000 is included in relevant Installation and Maintenance Manuals and Programming Manuals of particular control panels.

RADIAL LINE

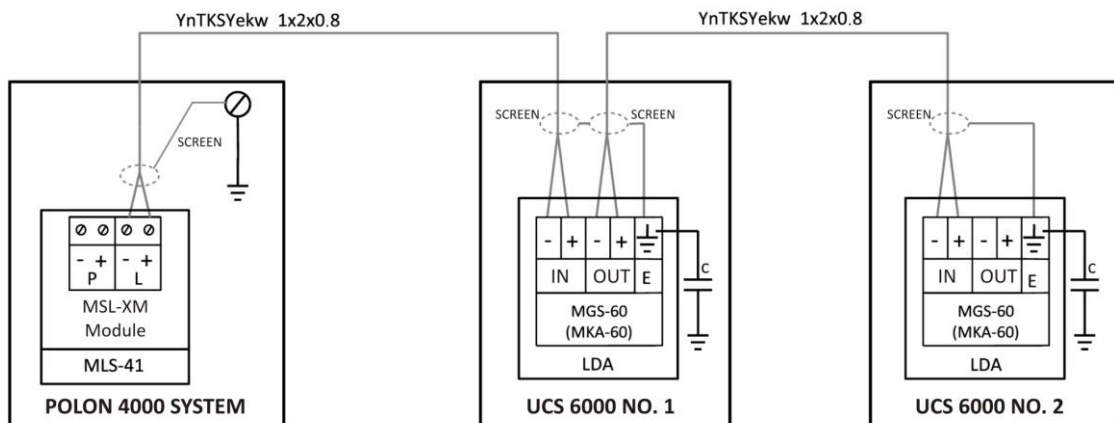


Fig. 5.6.1 UCS 6000 panel connection with POLON 4000 system control panel (radial line)

LOOP LINE

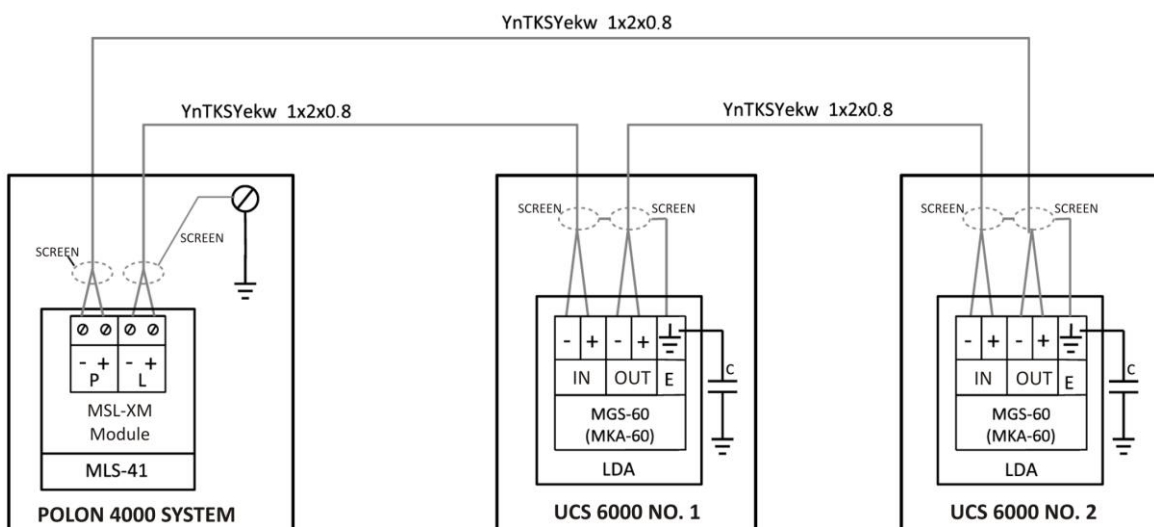


Fig. 5.6.2 UCS 6000 panel connection with POLON 4000 system control panel (loop-shaped line)

5.7 MZU-60 module and power supply

The MZU-60 universal power supply module (fig. 5.7) enables batteries connection. It is possible to fully charge and buffer the batteries and ensure power supply status monitoring of the control panel remaining modules. The maximum number of MZU-60 modules in the control panel is 4 ($4 \times 16 \text{ A} = 64 \text{ A}$).

The power supply module address is set with the use of K1 and K2 keys of the 8-position SW1 switch.

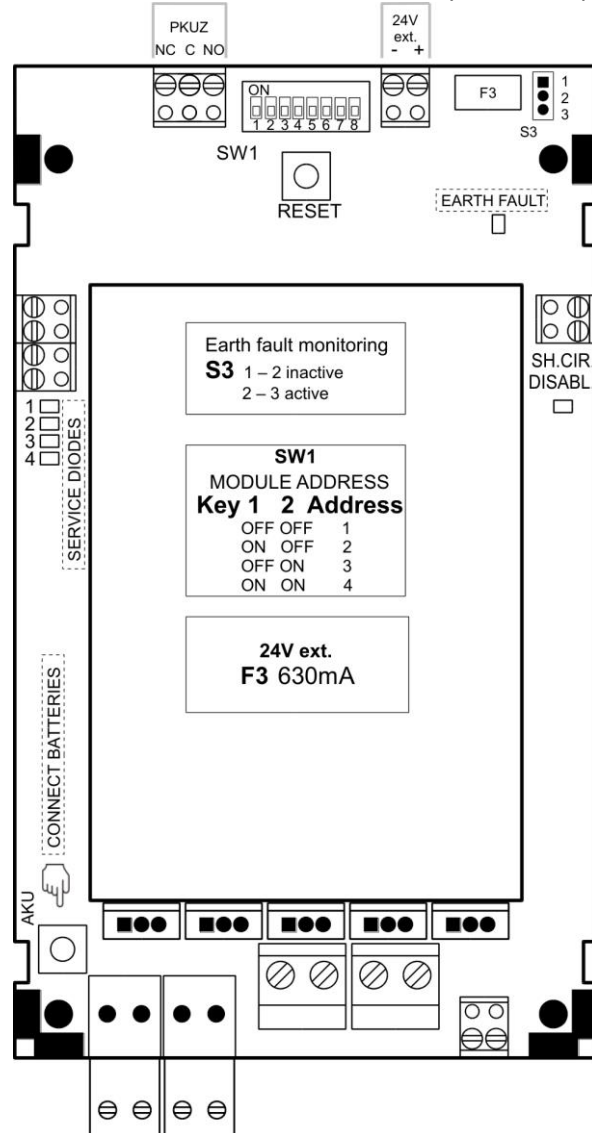


Fig. 5.7 MZU-60 module

5.7.1 Basic power supply

Basic power supply of the control panel is provided by the mains of 230 V/50 Hz. The voltage alteration within + 10 % and -15 % does not affect the control panel functioning. Simultaneous power supply of the control panel and buffering, or the module MZU-60 battery cluster charging is ensured by the internal power supply units generating the voltage adjusted by the MZU-60 modules depending on the secondary battery voltage level. The control panel power supply units secure the following power consumption:

- SP-150-27.5PLA power supply unit module - up to 5 A continuously;
- SP-240-27.5PLA power supply unit module - up to 10 A continuously;
- SP-500-27.5PLA power supply unit module - up to 20 A continuously.

At the stage of the installation designing it should be verified if the total power consumed from the control panel power supply units does not exceed the above values.

The verification should take into account the aggregate of the whole power simultaneously consumed from the terminals of the control panel, including the power supply of the control panel itself. Attention should be also paid to the admissible power values of particular outputs.

5.7.2 Reserve power supply

In the event of power loss, the reserve power supply for the control panel is provided with a battery cluster of the nominal voltage at 24 V (2 x 12 V, 4 x 12 V, 6 x 12 V or 8 x 12 V depending on the hardware configuration of the control panel) and capacity of 7.2 – 9 Ah. Switching from the basic power supply onto the secondary power supply is performed automatically with no blackouts. The working time of the control panel powered by the battery with no basic power supply and with no power consumption by auxiliary devices amounts to 72 hours in a quiescent mode. During detection without the basic power supply with all warning devices on the detection line and one manual smoke exhaust button PO-6X connected, but no power is drawn by the auxiliary devices, the power consumed by the control panel is not higher than 120 mA.

The battery is recharged automatically by the charging device integrated in the MZU-60 module of the control panel. The charging current is limited to about 2.1 A. When the battery is fully charged, the value of the charging current is close to zero and the buffering voltage should amount to 27,3 V (the value is settled by the producer). It is possible to make corrections of the buffering voltage value using settings of the SW1 keys of the MZU-60 module of the control panel. This activity should be conducted by a properly trained operator when the battery is full or when the batteries are disconnected.

General efficiency of the battery and the charging device is continuously monitored and the damage is signalled by the control panel.

5.7.3 Reserve power supply battery discharge

During the control panel operation based on power supply only from the battery, a natural and gradual voltage decrease takes place. If the voltage of the reserve power supply reaches the level of about 22 V, an acoustic signal is turned on. Further decrease in battery voltage and reaching the final voltage discharge level at 21 V, entails automatic disconnection of the modules powered from the power supply MZU-60 module of the control panel. This function is disabled in the control panel alarm mode. Reconnecting the power supply after an efficient battery connection may require (if no automatic start takes place) pressing the **AKU** push button available on the MZU-60 module. Recurrence of the basic power supply results in automatic actuation of the modules powered by the MZU-60 module.

Note – Installation, operation and utilisation of batteries should be carried out in accordance with the battery producer's guidelines. Waste batteries should be obligatory passed for recycling pursuantly to the regulations in force.

5.7.4 PKUZ power supply fault relay

The MZU-60 module is fitted with the PKUZ non-potential power supply fault relay. Any fault within the MZU-60 module power supply (e.g. battery, power supply unit) causes the relay contacts switch over.



5.7.5 Output to external devices power supply















The MZU-60 module is additionally furnished with a supervised output to power the external devices. This output enables power drawing of up to 0.5 A and is protected with a 630 mA fuse.

6 CONTROL PANEL CONFIGURATION AND PROGRAMMING

The UCS 6000 control panel configuration and programming is performed using the **UCSKonfigurator** computer software application.

The **UCSKonfigurator** facilitates:

-  modules operation parameters configuration, including:
 -  configuration saving to a file

- configuration loading from a file 
- configuration saving to a PDF file 
- configuration printout 
-  particular modules fault readout, including:
 - saving to a PDF file 
 - fault list printout 
-  the events journal readout, including:
 - saving to a PDF file 
 - the events list printout 
-  the modules software version readout, including:
 - saving to a PDF file 
 - software version printout 
-  setting and reading the control panel system date and time
-  using the software context help.

The UCS control panel is connected with the PC via a USB port. For the control panel – computer connection it is recommended to use a USB cable with A plug at one end and B plug at the other. In the case of a longer distance between the computer and control panel, a USB extension cable should be used. After connection, the UCS 6000 control panel USB port should be recognised by the computer as a USB Serial Port (COMxxx). At the *UCSKonfigurator* application start, while establishing connection, it is necessary to select the recognised COMxxx port.

After selecting the icon:



the module configuration window will appear:

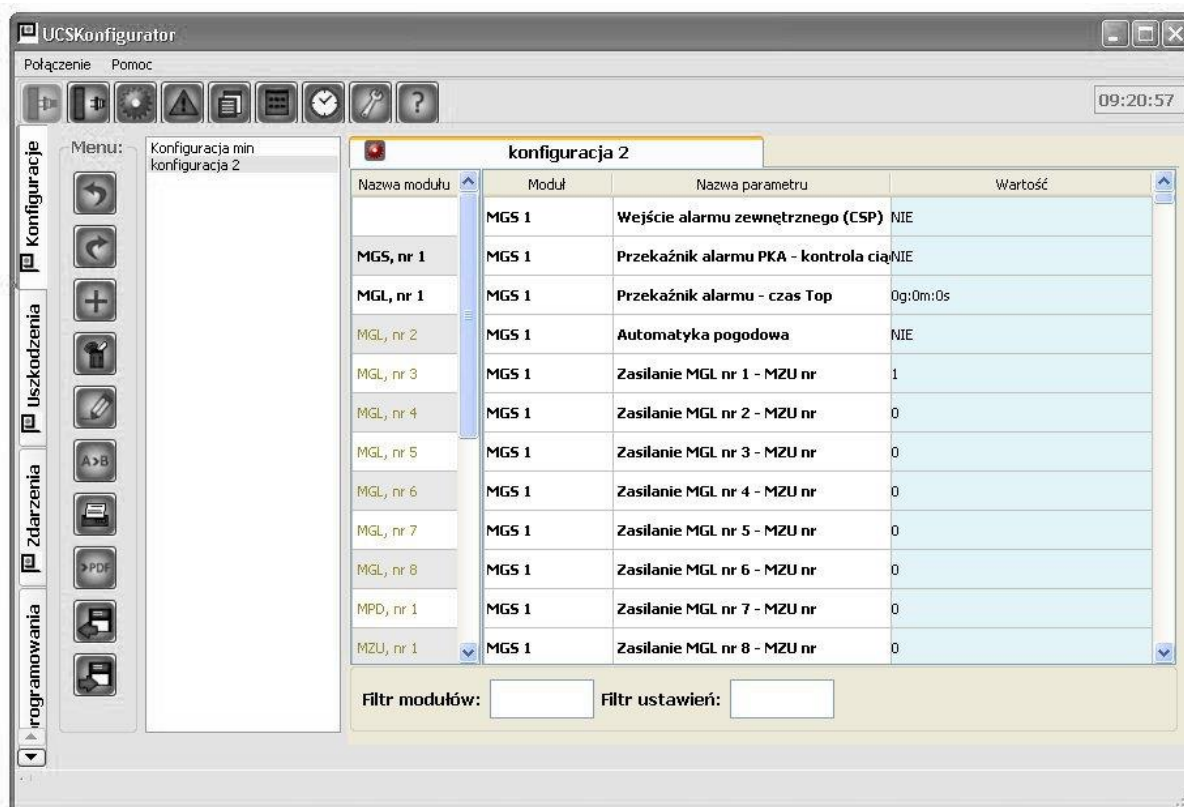


Fig. 6.1 Control panel modules configuration

6.1 MGS-60 module configuration

In the MGS-60 module the following options can be configured and programmed (table 6.1):

- an external alarm input,
- the PKA alarm relay,
- weather automation (rain/wind sensor),
- the manner of the MGL-60 modules powering (which module MZU-60 is used to power a given MGL-60 module),

the optical signalisation manner of in the smoke exhaust button connected to the MGL-60 no 1 (MGS-60).

Table 6.1. MGS-60 module parameters configuration

Pos.	Parameter/Function	Setting/Value	Description/Remarks
1	External alarm input (CSP)	YES	External alarm signal active/inactive
		NO	
2	PKA alarm relay - continuity monitoring	YES	PKA output path continuity monitoring active/inactive
		NO	
3	Alarm relay – Top time	HH:MM:SS	Alarm relay activation delay time
4	Wether automation	YES	Rain/wind sensor signal active/inactive
		NO	
5	MGL No. 1 power supply - MZU No.	0 – 4	MGL-60 No. 1 power supply from MZU-60 module No. ¹⁾

Table 6.1. continued

Pos.	Parameter/Function	Setting/Value	Description/Remarks
6	MGL No. 2 power supply - MZU No.	0 – 4	MGL-60 No. 2 power supply from MZU-60 module No. ¹⁾
7	MGL No. 3 power supply - MZU No.	0 – 4	MGL-60 No. 3 power supply from MZU-60 module No. ¹⁾
8	MGL No. 4 power supply - MZU No.	0 – 4	MGL-60 No. 4 power supply from MZU-60 module No. ¹⁾
9	MGL No. 5 power supply - MZU No.	0 – 4	MGL-60 No. 5 power supply from

			MZU-60 module No. ¹⁾
10	MGL No. 6 power supply - MZU No.	0 – 4	MGL-60 No. 6 power supply from MZU-60 module No. ¹⁾
11	MGL No. 7 power supply - MZU No.	0 – 4	MGL-60 No. 7 power supply from MZU-60 module No. ¹⁾
12	MGL No. 8 power supply - MZU No.	0 – 4	MGL-60 No. 8 power supply from MZU-60 module No. ¹⁾
13	Status signalling on PO-6x push buttons	YES	All modules status optical signalling (entire control panel status)
		NO	Only MGL No. 1 status optical signalling
14	Battery cluster disconnection disablement in alarm mode	YES	Battery disconnection disablement function active/inactive
		NO	

¹⁾ In the UCS 6000 control panel, whose case is fitted with more than one MZU-60 and MGL-60 module, it should be specified which MZU-60 modules are used to power MGL-60 modules. This is critical while performing the air venting function - in the event of a damage or disconnection of the power supply unit connected to a given MZU-60 module, the air venting function in the MGL-60 module powered by this MZU-60 module is disabled.

6.2 MGL-60 module configuration

The following options are configurable and programmable in the MGL-60 module (table 6.2):

- an LD conventional detection line,
 - the PO-6x manual smoke exhaust push button,
 - an output to fire protecting devices with terminals,
 - air venting.
- Table 6.2. MGL-60 module parameters configuration

Pos.	Parameter/Function	Setting/Value	Description/Remarks
1	Module declaration	TAK	MGL-60 module active/inactive ¹⁾
		NIE	
2	Group current [A]	4	MGL-60 module output current: 4 A or 8 A ²⁾
		8	
3	Conventional detection line	TAK	Active/inactive conventional detection line
		NIE	
4	Detectors preliminary reset (60 s)	TAK	Active/inactive detectors preliminary reset (p. 5.3.1)
		NIE	
5	PO-6x smoke exhaust push button - RELEASE line	TAK	Active/inactive RELEASE line of PO-6x smoke exhaust push button
		NIE	
6	PO-6x smoke exhaust push button - RESET line	TAK	Active/inactive RESET line of PO-62,63 smoke exhaust push button ³⁾
		NIE	

- table 6.2 continued.

Pos.	Parameter/Function	Setting/Value	Description/Remarks
7	Group output - operation mode	0	Inactive output
		1	Two-direction servomotor – smoke exhaust dampers
		2	Servomotor with spring – separation dampers
		3	Electromagnets – current break or impulse – fire door
8	Group output - activation criterion	0 – Lack - inactive output	Inactive output
		1 – Alarm - general of UCS	Any alarm in UCS, including one from POLON 4000/6000 system
		2 – Alarm - external output	Alarm from external system, e.g. IGNIS 1000
		3 – Alarm – POLON 4000/6000 system	Command from MASTER POLON 4000/6000 system

		4 – Alarm - 'union' of MGL zones	At least 1 MGL zone in alarm mode – see pos. 23-30
		5 – Alarm - 'conjunction' of MGL zones	At least 2 MGL zones in alarm mode – see pos. 23-30 ⁴⁾
		6 – Alarm - external output and own alarm	External alarm or/and own alarm from MGL (LDK or PO-6x)
		7 – Alarm - POLON system and own alarm	Command from POLON system or/and own alarm from MGL (LDK or PO-6x)
9	Group output - 3-wire controlling	TAK NIE	Active/inactive 3-wire controlling (p. 5.3.3.1.1)
10	Group output - power supply continuity monitoring	TAK NIE	Active/inactive output power supply continuity monitoring
11	Group output - T1 time	HH:MM:SS	Activation delay time of smoke exhausting group (Fig.6.7.1)
12	Group output - T2 time	HH:MM:SS	Activation time of smoke exhausting group (Fig.6.7.1)
13	Group output - T3 time	HH:MM:SS	Activation break time of smoke exhausting group (Fig.6.7.1)
14	Group output - numer of impulses	0 – n	Numer of controlling impulses of T2 and T2 times for output group operation mode 3 ⁵⁾
15	Group output - numer of limiting switches	TAK NIE	Active/inactive Monitoring of status of limiting switches of fire-fighting devices controlled by group output
16	Group output - limiting switches continuity monitoring	TAK NIE	Active/inactive Limiting switches continuity monitoring ⁶⁾
17	Group output - voltage disconnection	TAK NIE	Active/inactive Group output voltage disconnection after reaching required position ⁷⁾

- c.d. tablicy 6.2.

Pos.	Parameter/Function	Setting/Value	Description/Remarks
18	Group output - forcing (deadlock)	TAK NIE	Active/inactive Dampers forcing function for output operation mode 1 – point 5.3.3.1.1
19	Air venting - push buttons – operation modes	0 1 2	No airing Mode 1 – point 5.3.5 Mode 2 – point 5.3.5
20	Air venting - weather disablement	TAK NIE	Active/inactive Airing disablement from rain/wind sensor signal ⁸⁾
21	Air venting - Tp1 time	HH:MM:SS	Opening time of airing push buttons in operation mode 2 – point 5.3.5 (Fig.6.7.3)
22	Air venting - Tp2 time	HH:MM:SS	Automatic closing time of airing push buttons in operation modes 1 and 2 – point 5.3.5 (Fig.6.7.3)
23 24 25 26 27 28 29 30	MGL zone No. 1 MGL zone No. 2 MGL zone No. 3 MGL zone No. 4 MGL zone No. 5 MGL zone No. 6 MGL zone No. 7 MGL zone No. 8	NIE	Zones for group output activation criterion 4 and 5: No – lack General alarm – alarm from LDK or PO-6x ⁹⁾ LDK – alarm from LDK only ¹⁰⁾ PO-6x – alarm from PO-6x only ¹¹⁾

- ¹⁾ The MGL no 1 module is automatically declared as YES.
- ²⁾ The MGL-60 modules are available for the main output current at 4 A and 8 A.
- ³⁾ The RESET button is available only in the PO-62 and PO-63 manual smoke exhaust button. In the case of the PO-61 button, the RESET option should be non-declared. Otherwise the UCS control panel will report a fault.
- ⁴⁾ In the event of programming the activation criterion 5 for the output, it will be activated, if at least 2 declared MGL zones are in an alarm mode.
- ⁵⁾ For the output operation mode 3, it is possible to programme any number of monitoring impulses with the T2 and T3 characteristic times (fig. 6.7.1).
- ⁶⁾ For the limiting switches continuity monitoring programming, it is necessary to programme the limiting switches status monitoring. Otherwise the UCS control panel reports a fault.
- ⁷⁾ For the output operation mode 1, it is possible to programme the output voltage disconnection in order to save power. The cylinders with limiting switches status monitoring will be cut off after the cylinder reaches the required position. In the lack of the limiting switches status monitoring, the disconnection takes place after about 120 seconds after activation.
- ⁸⁾ If the weather automation is programmed in the MGS-60 module, every MGL-60 module can be separately programmed whether it should react to a rain/wind sensor signal.
- ⁹⁾ At least one detection line or a manual smoke exhaust push button should be programmed in the MGL-60 module. Otherwise the UCS control panel reports a fault of wrong configuration.
- ¹⁰⁾ A detection line should be programmed in the MGL-60 module. Otherwise the UCS control panel reports a fault of wrong configuration.
- ¹¹⁾ A manual smoke exhaust button should be programmed in the MGL-60 module. Otherwise the UCS control panel reports a fault of wrong configuration.

6.3 MPW-60 module configuration

The following options are configurable and programmable in the MPW-60 module (table 6.3):

- 2 high-voltage PK1 and PK2 relays
- 2 LK1 and LK2 monitoring lines.

Table 6.3. MPW-60 module parameters configuration

Pos.	Parameter/Function	Setting/Value	Description/Remarks
1	Module declaration	TAK	Active/inactive
		NIE	MPW-60 module
2	PK1 relay - operation mode	0	Inactive relay
		1	Permanent activation, activation delay possibility – T1 time
		2	Temporary activation, T1 i T2 times
		3	Impulse – cycle activation T1, T2 i T3 times
		4	Impulse – quantitative activation T1, T2 i T3 times and number of controlling impulses n ¹⁾
	PK1 relay - activation criterion	0 – Lack	Inactive relay
		1 – Alarm - general of UCS	Any alarm in UCS, including from POLON 4000/6000 system
		2 – Alarm - external input	Alarm from external system, e.g. IGNIS 1000
		3 – Alarm – POLON 4000 system	Command from MASTER POLON 4000 system
		4 – Alarm - ‘union’ of MGL zones	At least 1 MGL zone in alarm mode – see pos. 24-31
		5 – Alarm - ‘conjunction’ of MGL zones	At least 2 MGL zones in alarm mode – see pos. 24-31 ²⁾
11	PK1 relay - T1 time	HH:MM:SS	PK1 activation delay time (Fig. 6.7.1)
12	PK1 relay - T2 time	HH:MM:SS	PK1 activation time (Fig.6.7.1)

13	PK1 relay - T3 time	HH:MM:SS	PK1 activation break time (Fig.6.7.1)
14	PK1 relay - number of impulses	0 – n	Number of controlling impulses of T2 and T2 times for output group operation mode 4 PK1 ¹⁾
15	PK2 relay - operation mode	0	Inactive relay
		1	Permanent activation, activation delay possibility –T1 time
		2	Temporary activation, T1 i T2 times
		3	Impulse-cycle activation, T1, T2 i T3 times
		4	Impulse-quantitative activation, T1, T2 i T3 times and number of controlling impulses n ¹⁾
16	PK2 relay - activation criterion	0 – Lack	Inactive relay
		1 – Alarm - general of UCS	Any alarm in UCS, including one from POLON 4000/6000 system
		2 – Alarm - external input	Alarm from external system, e.g. IGNIS 1000
		3 – Alarm –POLON 4000/6000 system	Command from MASTER POLON 4000/6000 system
		4 – Alarm - ‘union’ of MGL zones	At least 1 MGL zone in alarm mode – see pos. 32-39
		5 – Alarm - ‘conjunction’ of MGL zones	At least 2 MGL zones in alarm mode – see pos. 32-39 ²⁾
17	PK2 relay - T1 time	HH:MM:SS	PK2 activation delay time (Fig.6.7.1)
18	PK2 relay - T2 time	HH:MM:SS	PK2 activation time (Fig.6.7.1)
19	PK2 relay - T3 time	HH:MM:SS	PK2 activation break time (Fig.6.7.1)
20	PK2 relay - number of impulses	0 – n	Number of controlling impulses of T2 and T2 times for output group operation mode 4 PK2 ¹⁾
21	LK1 monitoring line - operation mode	Inactive	LK1 line disconnected
		Actuation monitoring	Active PK1 relay actuation monitoring
21	LK1 monitoring line - Tk1 time	HH:MM:SS	Time counted from PK1 relay activation moment, after which LK1 monitoring line input status is being checked (Fig.6.7.2)
22	LK2 monitoring line - operation mode	Inactive	LK2 line disconnected
		Actuation monitoring	Active PK2 relay actuation monitoring
23	LK2 monitoring line - Tk2 time	HH:MM:SS	Time counted from PK2 relay activation moment, after which LK2 monitoring line input status is being checked (Fig.6.7.2)
24	PK1 – MGL No. 1 zone	NO	PK1 relay zone criterion for activation criteria 4 and 5: No – lack General alarm – alarm from LDK or PO-6x LDK – alarm from LDK only PO-6x – alarm from PO-6x only Fire position – after reaching required fire position by devices controlled by main output ³⁾
25	PK1 – MGL No. 2 zone	General alarm	
26	PK1 – MGL No. 3 zone	Alarm – LDK	
27	PK1 – MGL No. 4 zone		
28	PK1 – MGL No. 5 zone	Alarm – PO-6x	
29	PK1 – MGL No. 6 zone		
30	PK1 – MGL No. 7 zone	Reached fire position	
31	PK1 – MGL No. 8 zone		

Table 6.3 continued

Pos.	Parameter/Function	Setting/Value	Description/Remarks
32	PK2 – MGL No. 1 zone	NO	Zones for PK2 relay activation criteria 4 and 5: No – lack General alarm – alarm from LDK or PO-6x ³⁾ LDK – alarm from LDK only ⁴⁾ PO-6x – alarm from PO-6x only ⁵⁾ Fire position – after reaching required fire position by devices controlled by main output ⁶⁾
33	PK2 – MGL No. 2 zone		
34	PK2 – MGL No. 3 zone		
35	PK2 – MGL No. 4 zone		
36	PK2 – MGL No. 5 zone		
37	PK2 – MGL No. 6 zone		
38	PK2 – MGL No. 7 zone		
39	PK2 – MGL No. 8 zone		

- 1) It is possible to programme any number of controlling impulses with the T2 and T3 characteristic times (fig. 6.7.1).
- 2) In the case of programming the activation criterion 5 for the output, it will be activated, if at least 2 declared MGL zones are in an alarm mode.
- 3) At least one detection line or a manual smoke exhaust button should be programmed in the MGL-60 module. Otherwise the UCS control panel reports a fault of wrong configuration.
- 4) A detection line should be programmed in the MGL-60 module. Otherwise the UCS control panel reports a fault of wrong configuration.
- 5) A manual smoke exhaust button should be programmed in the MGL-60 module. Otherwise the UCS control panel reports a fault of wrong configuration.
- 6) In the event of programming the zone from the reached fire position of a given MGL-60 module output, it is also required to programme the limiting switches monitoring in a given MGL module (Table 6.2 pos. 15). Otherwise the UCS control panel reports a fault.

6.4 MPD-60 module configuration

The following options are configurable and programmable in the MPD-60 module (table 6.4):

- 2 high-voltage PK1 and PK2 relays
- 2 LK1 and LK2 monitoring lines.

Table 6.4. MPD-60 module parameters configuration

Pos.	Parameter/Function	Setting/Value	Description/Remarks
1	Module declaration	TAK	Active/inactive
		NIE	MPD-60 module
2	PK1 relay - operation mode	0	Inactive relay
		1	Permanent activation, activation delay possibility – czas T1
		2	Temporary activation,, T1 i T2 times
		3	Impulse-cycle activation, T1, T2 i T3 times
		4	Impulse-quantitative activation, T1, T2 i T3 times and number of controlling impulses n ¹⁾
	PK1 relay - activation criterion	0 – Lack	Inactive relay
		1 – General alarm of UCS	Any alarm in UCS, including one from POLON 4000/6000 system
		2 – Alarm - external input	Alarm from external system, e.g. IGNIS 1000
		3 – Alarm – POLON 4000/6000 system	Command from MASTER POLON 4000/6000 system
		4 – Alarm - ‘union’ of MGL zones	At least 1 MGL zone in alarm mode – see pos. 27-34
		5 – Alarm - ‘conjunction’ of MGL zones	At least 2 MGL zones in alarm mode – see pos. 27-34 ²⁾

11	PK1 relay - T1 time	HH:MM:SS	PK1 activation delay time (Fig.6.7.1)
12	PK1 relay - T2 time	HH:MM:SS	PK1 activation time (Fig.6.7.1)
13	PK1 relay - T3 time	HH:MM:SS	PK1 activation break time (Fig.6.7.1)
14	PK1 relay - number of impulses	0 – n	Number of controlling impulses of T2 and T2 times for output group operation mode 4 PK1
15	PK1 relay - continuity monitoring	TAK	Active/inactive PK1 output line continuity monitoring
		NIE	
16	PK2 relay - operation mode	0	Inactive relay
		1	Permanent activation, activation delay possibility – T1 time
		2	Temporary activation, T1 i T2 times
		3	Impulse-cycle activation, T1, T2 i T3 times
		4	Impulse-quantitative activation, T1, T2 i T3 times and number of controlling impulses n ¹⁾
17	PK2 relay - activation criterion	0 – Lack	Inactive relay
		1 – General alarm of UCS	Jakikolwiek alarm w UCS, również z systemu POLON 4000/6000
		2 – Alarm - external input	Alarm z systemu zewnętrznego np. IGNIS 1000
		3 – Alarm – POLON 4000/6000 system	Rozkaz z systemu nadrzędnego POLON 4000/6000
		4 – Alarm - ‘union’ of MGL zones	At least 1 MGL zone in alarm mode – see pos. 35-42
		5 – Alarm - ‘conjunction’ of MGL zones	At least 2 MGL zones in alarm mode – see pos. 35-42 ²⁾
18	PK2 relay - T1 time	HH:MM:SS	PK2 activation delay time (Fig.6.7.1)
19	PK2 relay - T2 time	HH:MM:SS	PK2 activation time (Fig.6.7.1)
20	PK2 relay - T3 time	HH:MM:SS	PK2 activation break time (Fig.6.7.1)
21	PK2 relay - number of impulses	0 – n	Liczba impulsów sterujących o czasach T2 i T3 dla trybu pracy 4 PK2
22	PK1 relay - kontrola ciągłości	TAK	Active/inactive kontrola ciągłości linii wyjściowej PK2
		NIE	
23	LK1 monitoring line - operation mode	Inactive	Linia LK1 wyłączona
		Actuation monitoring	Aktywna kontrola zadziałania przekaźnika PK1
		External acknowledgement input	Aktywny przycisk zewnętrznego potwierdzenia alarmu/uszkodzenia
		External reset input	Aktywny przycisk zewnętrznego kasowania alarmu
24	LK1 monitoring line - Tk1 time	HH:MM:SS	Czas, po którym od momentu wysterowania przekaźnika PK1 następuje kontrola stanu wejścia linii kontrolnej LK1 (Fig.6.7.2) dla trybu pracy LK1 – kontrola zadziałania
25	LK2 monitoring line - operation mode	Inactive	Linia LK2 wyłączona
		Actuation monitoring	Aktywna kontrola zadziałania przekaźnika PK2
		External	Aktywny przycisk zewnętrznego

		acknowledgement input	potwierdzenia alarmu/uszkodzenia
		External reset input	Aktywny przycisk zewnętrznego kasowania alarmu
26	LK2 monitoring line - Tk2 time	HH:MM:SS	Czas, po którym od momentu wystereowania przekaźnika PK2 następuje kontrola stanu wejścia linii kontrolnej LK2 (Fig.6.7.2) dla trybu pracy LK2 – kontrola zadziałania
27	PK1 – MGL No. 1 zone	NIE	Strefy dla kryterium wystereowania przekaźnika PK1 4 i 5: Nie – brak Alarm ogólny – alarm z LDK lub PO-6x ³⁾ LDK – tylko alarm z LDK ⁴⁾ PO-6x – tylko alarm z PO-6x ⁵⁾ Pozycja pożarowa – po osiągnięciu przez urządzenia sterowane wyjściem głównym wymaganej pozycji pożarowej ⁶⁾
28	PK1 – MGL No. 2 zone	General alarm	
29	PK1 – MGL No. 3 zone	Alarm – LDK	
30	PK1 – MGL No. 4 zone		
31	PK1 – MGL No. 5 zone	Alarm – PO-6x	
32	PK1 – MGL No. 6 zone		
33	PK1 – MGL No. 7 zone	Reached fire position	
34	PK1 – MGL No. 8 zone		
35	PK2 – MGL No. 1 zone	NIE	Strefy dla kryterium wystereowania przekaźnika PK2 4 i 5: Nie – brak Alarm ogólny – alarm z LDK lub PO-6x ³⁾ LDK – tylko alarm z LDK ⁴⁾ PO-6x – tylko alarm z PO-6x ⁵⁾ Pozycja pożarowa – po osiągnięciu przez urządzenia sterowane wyjściem głównym wymaganej pozycji pożarowej ⁶⁾
36	PK2 – MGL No. 2 zone		
37	PK2 – MGL No. 3 zone		
38	PK2 – MGL No. 4 zone		
39	PK2 –MGL No. 5 zone		
40	PK2 – MGL No. 6 zone		
41	PK2 – MGL No. 7 zone		
42	PK2 –MGL No. 8 zone		

6.5 MKA-60 module configuration

Table 6.5. MKA-60 module parameters configuration

Lp.	Parameter/Function	Setting/Value	Description/Remarks
1	Module declaration	TAK	Active/inactive
		NIE	MKA-60 module

6.6 MZU-60 module configuration

Table 6.6. MZU-60 module parameters configuration

Pos.	Parameter/Function	Setting/Value	Description/Remarks
1	Module declaration	TAK	Active/inactive
		NIE	MZU-60 module

6.7 Activations time dependences

While configuring and programming particular modules, the available operation modes, activations variants and criteria, are time dependant. The dependences are presented in the figures below.

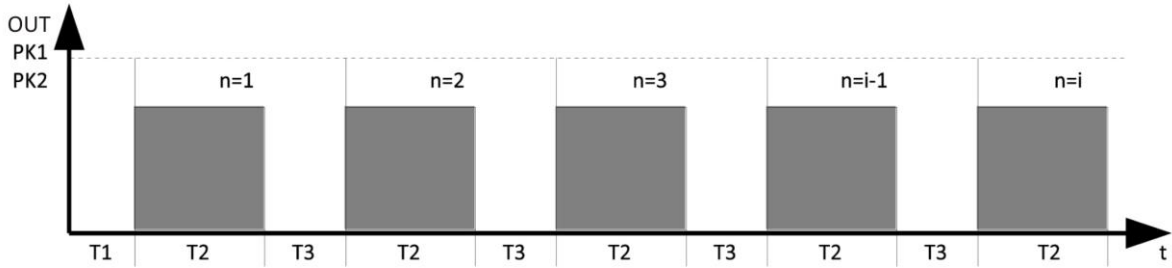


Fig. 6.7.1 OUT, PK1 and PK2 time control

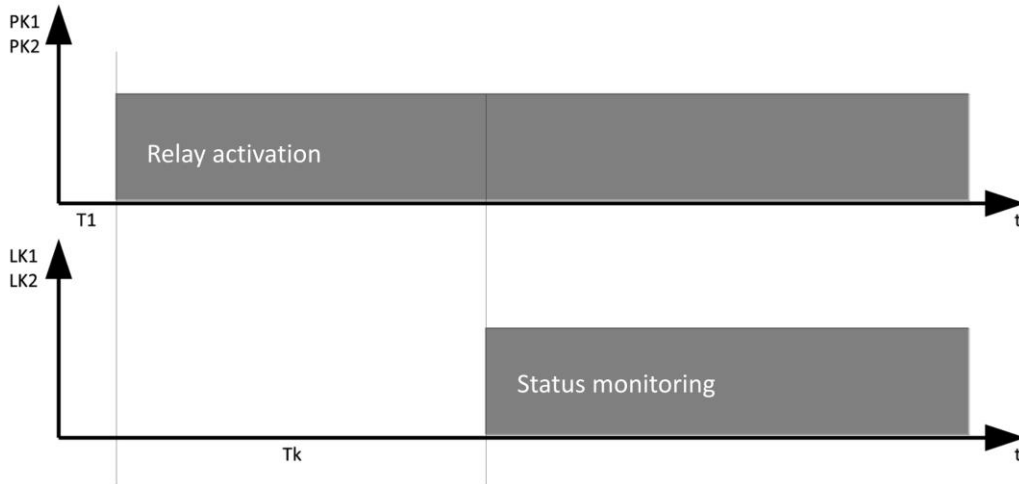


Fig. 6.7.2 PK1 i PK2 outputs actuation monitoring

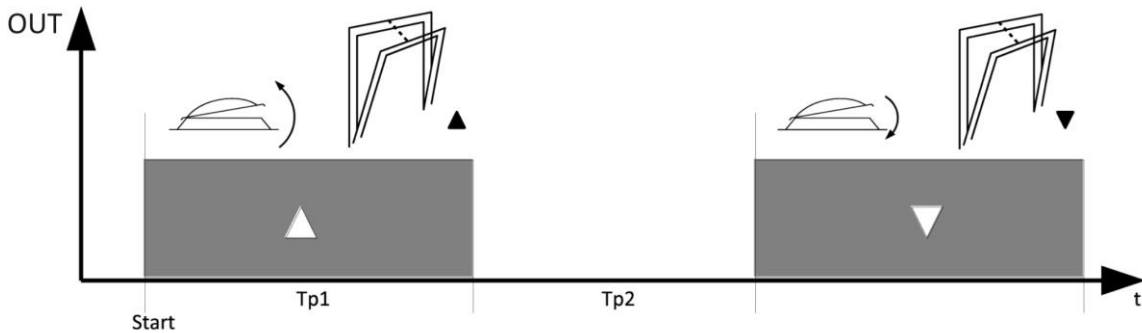


Fig. 6.7.3 Air venting

7 FAULTS, EVENTS JOURNAL, SYSTEM TIME, SOFTWARE VERSIONS, HELP

All UCS 6000 circuits are under monitoring. Every fault is reported and recorded in the events journal. The journal capacity amounts to 1,000 events. Once this number is exceeded, the oldest events are overwritten by the new ones.

7.1 Faults

The current faults can be read out using the *UCSKonfigurator* application. After selecting the icon:



the current list of faults will appear:

Modul	Nr	Uszkodzenie
13	1	MZU nr 3 – brak łączności
14	1	MZU nr 4 – brak łączności
15	1	Linia alarmu zewnętrznego – przerwa
16	1	PO6x linia przycisku WYZWOLENIE – przerwa
17	1	PO6x linia przycisku KASOWANIE – przerwa
18	1	Wyjście główne – nieprawidłowa pozycja
19	1	Wyjście główne – nieprawidłowa pozycja KR2
20	1	Zasilacz lub brak 230V
21	1	Brak baterii
22	1	Wysoka temperatura
23	1	Flash – błąd sumy kontrolnej
24	1	Linia kontrolna LK1 – przerwa
25	1	Linia kontrolna LK2 – przerwa
26	1	Brak łączności z procesorem liniowym

Fig. 7.1 Lista uszkodzeń centrali UCS 6000

7.2 Events journal

The events journal is accessible after choosing the icon:



The events journal window:

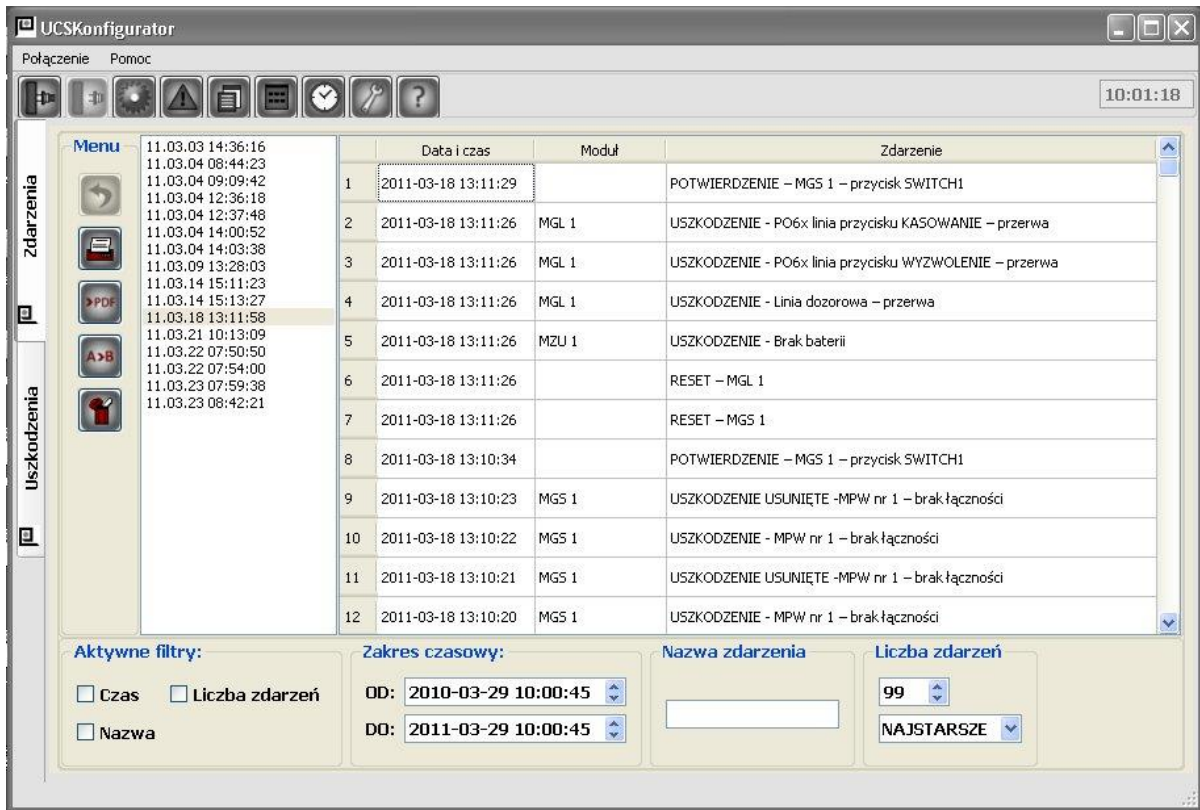


Fig. 7.2. Pamiętnik zdarzeń centrali UCS 6000

Active filters – facilitates filtering the table presenting the uploaded events.

The filter is active after selecting a relevant check box.

Filters:

Time range – filtering events depending on their time of occurrence.

Name of event – filtering events depending on their names.

Number of events – limiting the number of events displayed and sorting according to the age.

7.3 System time

In order to set the date and time of the control panel, it is necessary to choose the icon:



The following window will appear:

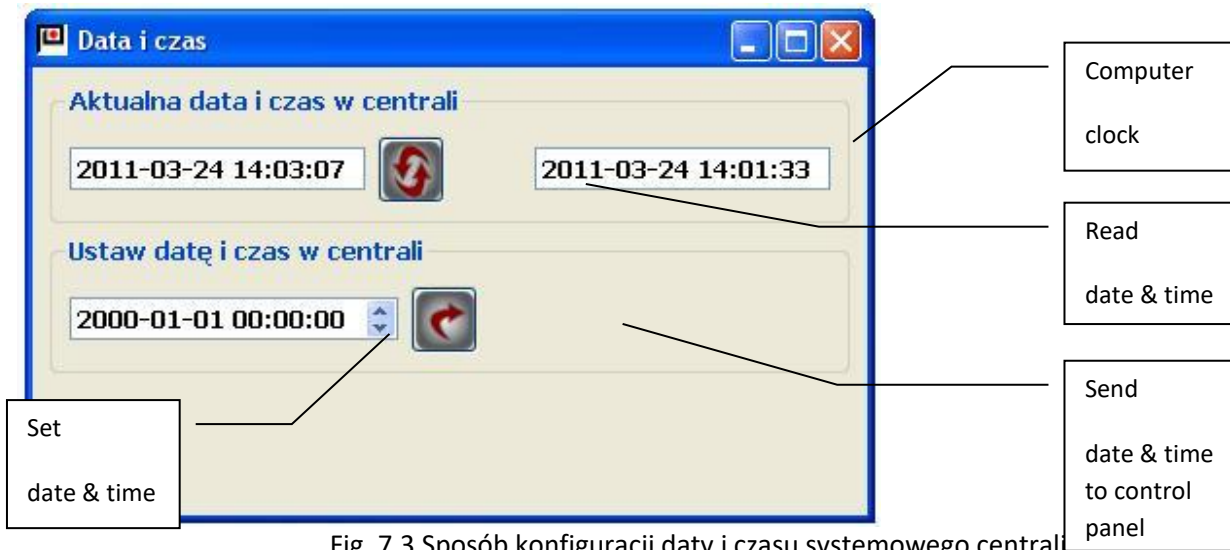


Fig. 7.3 Sposób konfiguracji daty i czasu systemowego centrali

7.4 Software versions

In order to read the software version, it is necessary to choose the icon:



The window of particular module software versions will appear:

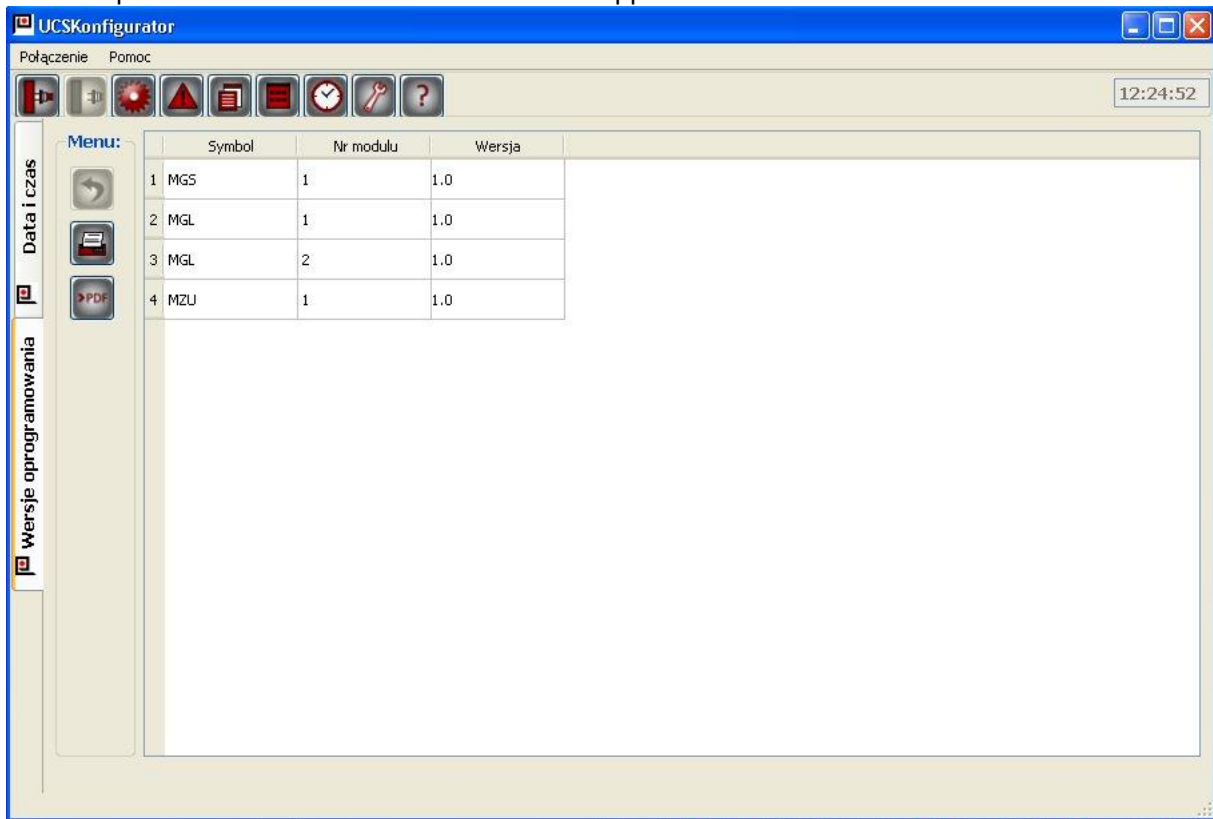


Fig. 7.4 Wersje oprogramowania modułów cen

Help

Pressing the push button



activates the **UCSKonfigurator** application help module. This module provides information how to operate the **UCSKonfigurator** application as well as the information how to configure the control panel.

8 INSTALLATION

8.1 Control panel mounting

Depending on the case type, the UCS 6000 control panel:

- should be mounted on the wall with three M5 bolts and expansion anchor bolts of the diameter at min. 8 mm – case up to 16 A (fig. 8.1.1),
- should be placed on a stable ground next to the wall and mounted to it; or should be mounted on the wall with three M8 bolts and expansion anchor bolts of the diameter at min. 12 mm - case from 32 A to 64 A (fig. 8.1.2).

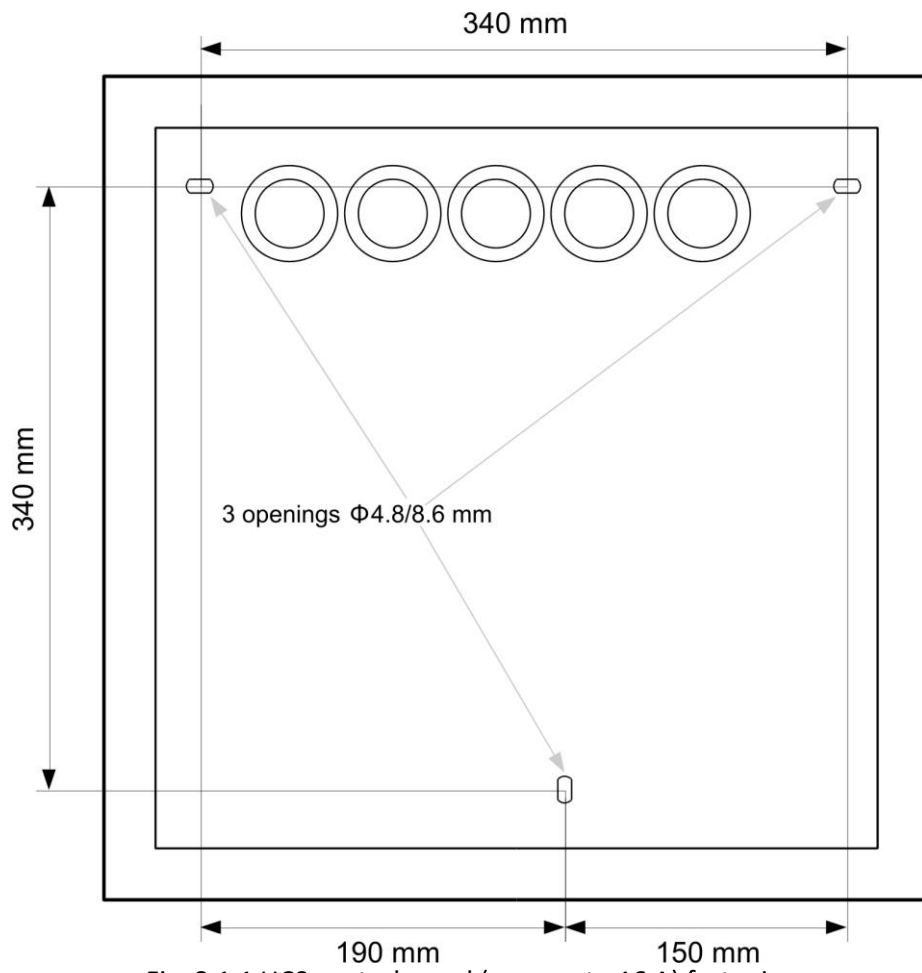


Fig. 8.1.1 UCS control panel (case up to 16 A) fastening

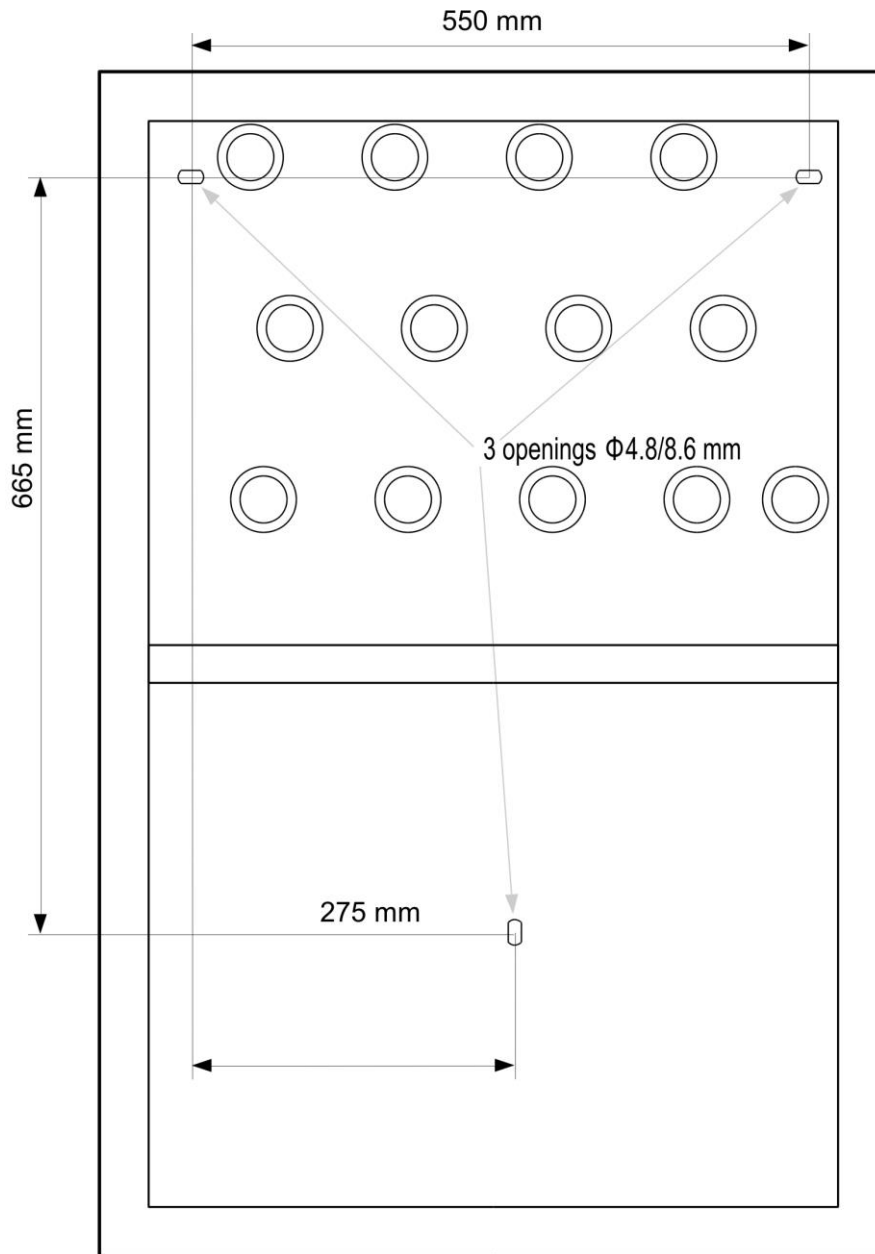


Fig. 8.1.2 UCS control panel (case from 32 A to 64 A) fastening

8.2 Input and output circuits connecting terminals

The control panels modules are fitted with a set of terminals designed for connection of external low-voltage installation wirings (or high-voltage – MPW-60) and power supply. The installation wirings can be introduced into the control panel from a flush mounted or surface mounted wiring. They are led through round openings with rubber glands; separately: power connection and low-voltage wirings.

Mains power supply

Connection of the 230 V/50 Hz power supply and connection of the shielding wiring is carried out using a self-clamping dice marked with L N PE symbols and with a yellow triangle with a thunderbolt.

Reserve power supply

The battery connection is executed through the terminals marked '- AKU +'. The battery positive wire is protected by an automotive fuse (19 mm) of the value specified in point 9.1.

9 OPERATION AND MAINTENANCE

9.1 Proper usage guidelines

The control panel un failing operation depends on proper working conditions, power supply voltage, state of the batteries and periodical inspections.

The periodical inspections should be carried out by an authorised maintenance operator that was appointed by the user to perform the installation maintenance works. Any fault/damage should be immediately reported to the maintenance operator.

While replacing fuses, attention should be paid to their nominal values. It is not allowed to replace used fuse with a fuse with a greater nominal value. This may damage the unit.

The UCS 6000 control panels are fitted with the following fuses:

The MGS-60 module:

- F1: 6.3 A (4A version) type: mini NANO² – the main output circuit
- F1: 10 A (8A version) type: mini NANO² – the main output circuit
- F2: 630 mA type: mini NANO² - the rain/wind sensor power supply circuit

The MGL-60 module:

- F1: 6.3 A (4A version) type: mini NANO² – the main output circuit
- F1: 10 A (8A version) type: mini NANO² – the main output circuit

The MZU-60 module:

- F3: 630 mA type: mini NANO² – the ext. output circuit 24V

The MPW-60 module:

- F4: 6.3 A type: fusing cut-out T6,3L250 V – the PK1 secondary circuit
- F5: 6.3 A type: fusing cut-out T6,3L250 V – the PK2 secondary circuit

The batteries (positive wire):

- F6: 5 A (150 W power pack) type: automotive fuse 19 mm 5 A - brown
- F6: 10 A (240 W power pack) type: automotive fuse 19 mm 10A - red
- F6: 20 A (500 W power pack) type: automotive fuse 19 mm 20A - yellow

9.2 Periodical inspection and maintenance rules

The UCS 6000 control panel periodical inspection should be carried out at least once a year according to p. 11.2 of the PKN-CEN/TS 54-14:2006 standard.

The condition of the shielding, earthing or ground wiring of the control panel should be inspected as well as the battery clamps should be cleaned every six months.

The batteries voltage level should be checked at least once a year. In order to do that, it is required to disconnect the mains power supply for about 2 hours and - after re-connecting - to check if the battery is charged within the time not longer than 5 hours.

Properly functioning control panel, which is inspected regularly, does not require any special maintenance efforts. It is recommended to remove dust from the control panel outer surface regularly.

10 PACKING, STORING, TRANSPORTATION

10.1 Packing

The control panel is placed in a individual packaging that limits a possibility of movements and eliminates damages during loading and transporting.

The package is marked with the following data:

- name or trademark of the producer,
- name and type of the control panel,
- the control panel weigh.

In addition, the package should contain the following warnings: 'CAUTION FRAGILE', 'THIS SIDE UP, DO NOT TURN', 'PROTECT FROM HUMIDITY') or respective signs according to the PN-EN ISO 780:2001 (PN-85/0-79252) standard.

10.2 Storing

The control panel should be stored in closed spaces at the temperature of $+5\text{ °C} \div +40\text{ °C}$ and relative humidity between 40 % and 80 %, free of caustic vapours and gases. In the case of the control panel longer storage for more than 6 months, it should be connected to the mains for 1 hour and checked if it works properly. While storing, the control panel should not be exposed to heat, sunlight and heating devices impact.

10.3 Transporting

The control panel should be carried in the packing pursuant to p. 10.1. in closed transport means. Attention should be paid to the transportation guidelines specified on the packaging. The control panel should be protected against rapid shocks and temperature of the environment exceeding the range -25 °C to $+55\text{ °C}$.

11 INSTRUCTIONS ON THE CONTROL PANEL PROPER FUNCTIONING INSPECTION AFTER INSTALLATION

The checklist prior to commissioning

- compliance of installation of detection lines, smoke exhaust manual buttons, power supply, fire-fighting devices monitoring installations, etc. with the design
- devices installation within the detection lines, executive equipment installation
- control panel mounting
- connection of the lines leading to the control panel to proper terminals, except for the 230 V mains wiring

Electric connections checks

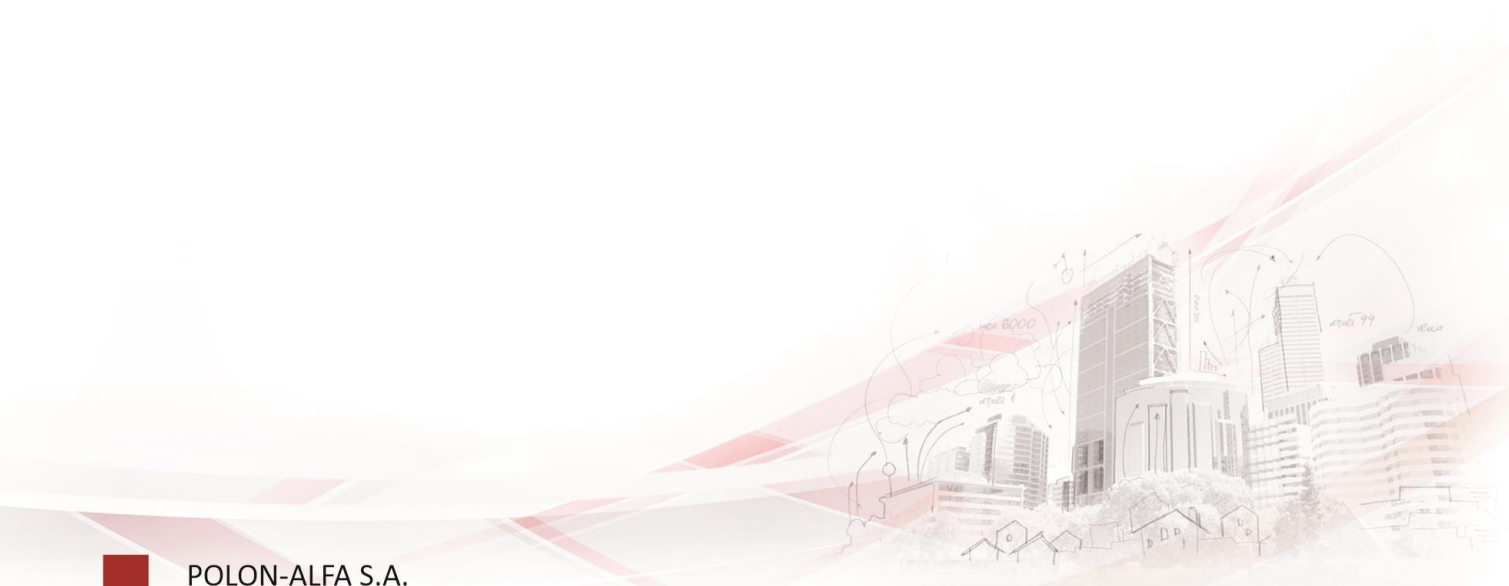
- checking of the configuration jumpers position in all control panel modules,
- checking of proper connection of line wiring to the terminals of the control panel modules, including polarisation +, -
- checking of connections of end-of-line resistors in edging sockets of the supervised lines (detection, executive and monitoring)
- in the case of unused lines (detection, executive and monitoring) - checking of connections of end-of-line resistors to the terminals of those lines in the control panel modules
- batteries presence
- serial connection of 12 V batteries (2 pieces) with special attention paid to observing +,- polarisation on the contact and battery clamps

Commissioning

- connection of the mains power supply and PE wire. **NOTE! Dangerous voltage!**
- the control panel commissioning by switching the power supply units to I position
- readout of faults detected by the control panel and eliminating potential errors in installation
- setting the control panel optimum configuration parameters using the functions described in point 6
- checking proper functioning of the executive devices interoperating with the control panel
- checking of an alarm and fault signal transmission

It is recommended to check and possibly set the current data and time and clear the events memory once the system has been started.

The works are deemed completed if the above checklists have been executed and no malfunctions have been reported of any devices of the system and of the control panel in a quiescent mode (no fault signals). The system is ready to be handed over to the user.



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