



UCS 6000 UNIVERSAL CONTROL PANEL

Overview

The UCS 6000 universal control panel is designed for actuation 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);
- automatic or manual actuation of fire protection devices installed in smoke exhaust systems;
- acoustic and optic signalling of 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 control systems (e.g. POLON 4000 system, IGNIS 1000/2000 system or other) about alarm condition, faults, present state of fire protection devices.

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

Control panel components

The control panel can be equipped with:

- **MGS-60 module (x1):**
 - supervised line that receives an alarm signal from an external fire detector and alarm control panel,
 - a rain and/or wind sensor supply line,
 - a rain and/or wind sensor signal receiving line,
 - the supervised PKA alarm relay (continuity of wire), the PKU fault relay.
- **MGL-60 module (x8):**
 - conventional detector line (40 model range detectors),
 - conventional line for manual smoke exhaust call points (PO-6X model range manual call points),

- supervised main output, universal for control and supply of fire protection devices (servomotors of fire/smoke dampers, electromagnets of fire zones separators, etc.),
- monitoring lines for monitoring the status of contacts installed in fire protection devices, which are controlled and supplied by the main output,
- lines receiving signals from ventilation push buttons (OPEN, CLOSE);

- **MPW-60 module (x4):**

- 2 programmable relays PK1 and PK2 high voltage type (5 A / 230 V),
- 2 supervised programmable LK1 and LK2 (24 V) monitoring lines;

- **MPD-60 module (x1):**

- 2 supervised, programmable relays PK1 and PK2 (1 A / 24 V),
- 2 supervised, programmable monitoring lines LK1 and LK2 (24 V);

- **MKA-60 module (x1):**

- communication line for POLON 4000 system (addressable detector line);

- **MZU-60 module (x4):**

- supply fault relay - PKUZ (1 A / 24 V),
- supervised output for supply of external devices (0.5 A / 24 V).

Function

The primary purpose of the UCS 6000 control panel, in addition to fire hazard detection, is to control and power supply fire protection devices such as various types of fire/smoke dampers, fire protection windows (equipped with electric servomotors), and fire zone separators (electromagnets), etc. For the purpose of control and supply of the mentioned devices, there is a dedicated output of a main relay installed in the MGL-60 module.

The output of the main relay is universal and can be programmed for three operation modes – with appropriate time parameters.

Additionally, continuity of power supply and monitoring the status of ending switches 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 prevention device drives, in addition to output operation modes, control of two-direction servomotors, double wire or triple wires were implemented.

For detection of a fire, there is a detector line dedicated with the 40 model range conventional detectors. This line has the ability to program the alarm variant with preliminary reset (60 seconds) to eliminate false alarm activation.

Activation of fire protection devices in the smoke exhaust control unit is possible thanks to the following:

- activation of a detector in a detector line,
- activation of PO-6x manual call point,
- receiving signal from external fire alarm control panel, e.g. from IGNIS 1000/2000,
- receiving commands from the POLON 4000 system control panel.

In an event of receiving an initiation alarm signal, smoke exhaust procedure is commenced. It is done in accordance to a pre-determined smoke exhaust procedure for a given facility. At this time ventilation push buttons are blocked, signals from rain and/or wind are ignored.

In quiescent mode, it is possible to perform day ventilation – using windows or ventilation dampers.

UCS 6000 control panel modules are equipped with a set of universal inputs and outputs for connection of external smoke exhaust installations.

Special computer application - UCS (UCS Konfigurator) is used for programming the UCS 6000 control panels. The control panel is connected to a computer using USB interface.

Design and basic versions of UCS 6000

The UCS 6000 control panel is offered in two cuboid shape cabinet versions:

- up to 16 A, and
- from 32 A up to 64 A.

Both cabinets are made in a form of cuboid steel casings, where the smaller one is dedicated for wall mounting installation and the larger one – because of its heavy weight – is dedicated for installation as a standing version (on the floor) and fastened to the wall (for more stability).

All necessary modules required for proper operation of the control panel are placed inside the cabinets (including power supply modules and reserve batteries).

Basic versions of UCS 6000 control panels:

- 4A (1x4A) and a cabinet up to 16 A,
- 8A (2x4A) and a cabinet up to 16 A,
- 8A (1x8A) and a cabinet up to 16 A,
- 16A (2x8A) and a cabinet up to 16 A,
- 32A (4x8A) and a cabinet from 32 A to 64 A.

Besides the above-mentioned versions, there are dozen more versions available (in different configurations) from 4 A to 64 A and from 1 up to 8 independent smoke ventilation zones.

A set of control panel covers the following functional modules:

- MGS-60 4 A: main controller module (containing one MGL module in 4 A version);
- MGS-60 8 A: main controller module (containing one MGL module in 8 A version);

- MZU-60: universal power supply module (16 A / 24 V);
- MGL-60 4 A: group-line module, 4 A version;
- MGL-60 8 A: group-line module, 8 A version;
- MPW-60: high voltage relays module (2 x PK 5 A / 230 V, 2 x LK 24 V);
- MKA-60: addressable communication module (POLON 4000 system);
- MPD-60: additional relays module (2 x PK 1 A / 24 V, 2 x LK 24 V);
- SP-150-27.5PLA: supplier module 150 W (5 A);
- SP-240-27.5PLA: supplier module 240 W (10 A);
- SP-500-27.5PLA: supplier module 500 W (20 A);
- batteries 7.2 – 9 Ah: 2 ea. for each universal power supply module.

Technical specifications

Supply voltage:	
- mains 230 V	+ 10 % - 15 %/50 Hz
- reserve	
- cabinet up to 16 A	
batteries	2 x 12 V from 7.2 Ah up to 9 Ah
- cabinet from 32 A up to 64 A	
batteries	8 x 12 V from 7.2 Ah up to 9 Ah
Battery current consumption	
in quiescent condition	< 120 mA
Current consumption from detector line	
of POLON 4000 system control panels	< 0.6mA
Operating voltage of the control panel	24 V DC + 25 % - 25 %
Ongoing current available from supplier	
- supplier 150 W	5 A
- supplier 240 W	10 A
- supplier 500 W	20 A
• Main controller module MGS-60:	
External alarm line:	
- max. line resistance	2 x 120 Ω
- line insulation resistance	> 100 kΩ
- end-of-line (EOL) resistor	5.6 kΩ ± 5 %; 0.5 W
Supply of rain and/or wind sensor:	
- output voltage	24 V DC + 25 % - 25 %
- output current	0.5 A
Monitoring line of rain and/or wind sensor:	
- max. line resistance	2 x 100 Ω
- line insulation resistance	> 100 kΩ
PKA alarm relay:	
- Load-current capacity	
of NO/NC contact	1 A / 24 V DC
- T _{op} – activation delay time	programmable
-continuous monitoring	YES
Fault PKU relay:	
- Load-current capacity	
of NO/NC contact	1 A / 24 V DC
• MGL-60 - Group-line Module:	
Main output:	
- output voltage	24 V DC + 25 % - 25 %
- output current	4 A or 8 A
- modes of operation	programmable (3)
- T1 activation delay time	programmable
- T2 actuation time	programmable
- T3 time of activation break	programmable
- monitoring continuity	YES
Monitoring state of limit switch lines: (POLON 4900)	
- max. line resistance	2 x 100 Ω
- line insulation resistance	> 100 kΩ
- status monitoring (programmable)	YES

- monitoring continuity (programmable)	YES
Line of ventilation push buttons:	
- max. line resistance	2 x 100 Ω
- line insulation resistance	> 100 kΩ
Conventional detector line:	
- number of detectors (max.) in line	32
- max. line resistance	2 x 120 Ω
- line insulation resistance	> 100 kΩ
- end-of-line (EOL) resistor	5.6 kΩ ± 5 %; 0.5 W
- max. quiescent current of detectors	2 mA
- total line quiescent current (max.)	7 mA
PO-6x manual call points line:	
- number of call points in line (max.)	8
- max. line resistance	6 x 120 Ω
- line insulation resistance	> 100 kΩ
- end-of-line (EOL) resistor	5.6 kΩ ± 5 %; 0.5 W
- quiescent current of one manual call point (max.)	12 mA
- total line quiescent current	< 100 mA

• MPW-60 - High voltage relays module:

PK1 and PK2 relays:

- Load-current capacity of NO/NC contact	5 A / 230 V AC
- modes of operation (programmable)	4
- variants of activation (programmable)	5
- T1 activation delay time	programmable
- T2 actuation time	programmable
- T3 time of activation break	programmable
- N number of control impulses	programmable

LK1 and LK2 monitoring lines that control activation of PK1 and PK2 relays:

- max. line resistance	2 x 100 Ω
- line insulation resistance	> 100 kΩ

• MPD-60 - Additional relay module:

PK1 and PK2 relays:

- Load-current capacity of NO/NC contact	1 A / 24 V DC
- modes of operation (programmable)	4
- variants of activation (programmable)	5
- T1 delay time of activation	programmable
- T2 actuation time	programmable
- T3 time of activation break	programmable
- N number of control impulses	programmable

Monitoring lines LK1 and LK2:

- modes of operation (programmable)	3
- max. line resistance	2 x 100 Ω
- line insulation resistance	> 100 kΩ

• MZU-60 - Universal power supply module:

Supply fault PKUZ relay:

- Load-current capacity of NO/NC contact	1 A / 24 V DC
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Supply of external devices output:

- output voltage	24 V DC + 25 % - 25 %
- output current	0.5 A

• Interoperation with devices:

- certified servomotors of fire protection dampers supplied by 24 VDC,
- certified electromagnets (holders) for fire protection doors supplied by 24 VDC,
- POLON 4000 system fire alarm control panels:
- POLON 4100 fire alarm control panels
- POLON 4200 fire alarm control panels
- POLON 4500 fire alarm control panels
- POLON 4900 fire alarm control panels
- IGNIS 1000/2000 system fire alarm control panels

Operating temperature range from -10 °C up to +55 °C

Ingress protection IP 30

Dimensions (without assembly attachments and legs)

- cabinet up to 16 A 400 x 400 x 160 mm

- cabinet from 32 A up to 64 A 1150 x 630 x 190 mm

Mass (without batteries)

- cabinet up to 16 A < 8 kg

- cabinet from 32 A up to 64 A < 40 kg