ADDRESSABLE GAS DETECTION CDG 6000

Purpose

The CDG 6000 addressable gas detection control panel is designed to signal the leakage of combustible gases and dangerous concentrations of carbon monoxide, upon receipt of information from connected gas detectors. The control panel can operate with maximum 16 or 99 addressable gas detectors range PSG-6000 or PSG-6100. The control panel has relay outputs for controlling external devices and dedicated output for the shut-off valve and monitoring inputs.

Control panel is equipped with extensive diagnostic and self-monitoring systems, guarantees long-lasting and reliable operation of the dangerous gas concentrations early-warning system.

Functionality

The CDG 6000 gas detection control panel enables:

- control and signal the leakage of combustible gases (CNG, LPG) and dangerous concentrations of carbon monoxide (CO),
- detection and signalling of exceeding alarm thresholds of gas concentration,
- automatic closing of the gas shut-off valve,
- automatic activation of outputs to external signalling and control devices,
- monitor of the status of external devices,
- automatic control of internal circuits,
- transmission of information to the POLON 4000 / POLON 6000 fire alarm system.

The CDG 6000 is equipped with:

- 1 detection line allowing the connection of a maximum of 16 or 99 addressable gas detectors type PSG-6000 or PSG-6100,
- 4 relay outputs for controlling external signaling and control devices,
- 1 output to control the gas shut-off valve,
- 4 monitoring lines to monitor the status of external devices,
- output to power external devices or gas detectors with a current load of 0.5 A / 12 V.

Gas detection control panel CDG 6000 can cooperate with addressable gas detectors PSG-6000:

Detector	Detected gas	External DC power
PSG-6001	CNG (natural gas-methane)	from 9 to 30 V DC
PSG-6002	LPG (propane-butane)	from 9 to 30 V DC
PSG-6003	CO (carbon monoxide)	from 9 to 30 V DC
PSG-6103	CO (carbon monoxide)	loop powered

The PSG-6000 detectors, installed in the addressable detection line of the CDG 6000 control panel, require additional power supply from an external 12 V (or 24 V) power supply or from the addressable loops of the CDG 6000 control panel. It's not applicable to the PSG-6103 detector which is powered only from the control panel detection loop.

Detectors are connected with the CDG 6000 control panel using specially designed detection line. Each detector is assigned with unique address. The control panel may therefore display state of each detector. The detectors line may operate in two modes, as a radial or loop line. In the loop line mode, the line end is connected with the control panel. The system is thus able to operate correctly even with line breakage in one place. The line is also resistant to short circuits. The detectors are equipped with insolators which separate the short circuit in such a way to assure operability of the maximum number of detectors.

The CDG 6000 control panel can signal three alarm levels related to the relevant gas concentration levels reported by connected detectors. The control panel identifies alarming detectors by providing relevant information on the display. CDG 6000 control panel is equipped with extensive device and connected external devices self-diagnostics system. Summary fault information is presented by FAULT indicator on the device panel. Furthermore, similarly to alarms, the full list of faults is accessible using the device display.

The control panel is equipped with output for activation of cut-off valves. The output generates 12 V pulse. The output is fitted with built-in protection that limits the maximum current to 10 A. Pulse time may be programmed. The output is equipped with software protection against valve electromagnet damage. The protection limits the possibility of valve activation before the end of the defined pause time.

NOTE

The valve may be properly energized only with a functional battery connected to the control panel. Damaged or discharged battery does not allow for proper control pulse generation.

The alarm and fault information is stored in non-volatile internal memory as event log. The log stores all events with their occurrence date and time. The event log content is accessible using „Konfigurator CDG 6000" configuration application. The CDG 6000 control panel is configured and programmed using **Konfigurator CDG 6000** computer application.

Design of the control panel

The control panel has an plastic enclosure, adapted to be mounted on the wall. At the bottom of the casing, there are cable glands for power cable, control cables, monitoring lines and detection lines. All electronic components are mounted on a common circuit board. There are manipulation and signalling elements as well as a liquid crystal display at the front of the enclosure. The backup battery is installed inside the control panel.

NOTE

The control panel equipment does not include a backup battery - it must be ordered separately. Detailed information for installers and service companies is included in the technical manual.

Technical data

Power supply:	
- basic - mains	230 V + 10% - 15% / 50 Hz
- backup - battery 1 pc.	12 V / 2,3 Ah
The mains current consumption 230 V	0,15 A
The battery current consumption in quiescent mode	≤ 100 mA
Number of detector lines	1
Cooperating gas detectors	type PSG-6000 and PSG-6100
Maximum number of detectors on the line	16 / 99
Current consumption from the detection line/line length (selectable)	50 mA / 2x45 Ω, 22 mA / 2x75 Ω, 20 mA / 2x100 Ω
Maximum capacity of detection line cables	300 nF
Number of relay outputs	4
Load capacity of the relay outputs	8 A / 30 V DC, 8 A / 250 V AC
Shut-off valve control output	12 V / 11 A
Control pulse time	0,2 s to 1 s
Number of distinguished input states	3 + 2 (short-circuit and opening)
Output load for powering external devices:	
- version CDG 6000-16	0,5 A / 12 V
- version CDG 6000-99	1 A / 12 V
Number of control lines	4
Max permissible power supply output load for external devices or detectors	0,5 A / 12 V
Number of recorded events	5000
Operating temperature range	from -10°C up to +55°C
Housing tightness	IP 54
Weight (without battery)	< 2,3 kg
Dimensions (without glands)	300 x 230 x 86 mm

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