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Mine atmospheric monitoring system MDO-01

Technical parameters:

Operating voltage	L+PE+N, 230V, 50Hz
Protection according to ČSN 3 32000-4-41	
Distribution system	TN-S
Mode of operation	continuous measurement of gas concentration
Sensor housing	IP54, IP65
Design of sensors	I M1 Ex ia I
Switchboard housing	IP30
Operation	software, calibration of sensors
Protection against atmospheric disruptions (switchboard)	with grounding
Ambient temperature	0°C to 40°C

The equipment necessary to operate the system:

The equipment only requires the availability of voltage for its operation; in the absence of supply voltage, a backup source is used (for a limited time).

The MDO-01 system is one of the specific solutions for monitoring mine atmospheres. This monitoring includes the continuous measurement of desired gas concentrations in mine atmospheres (e.g., methane, carbon monoxide, oxygen, etc.).

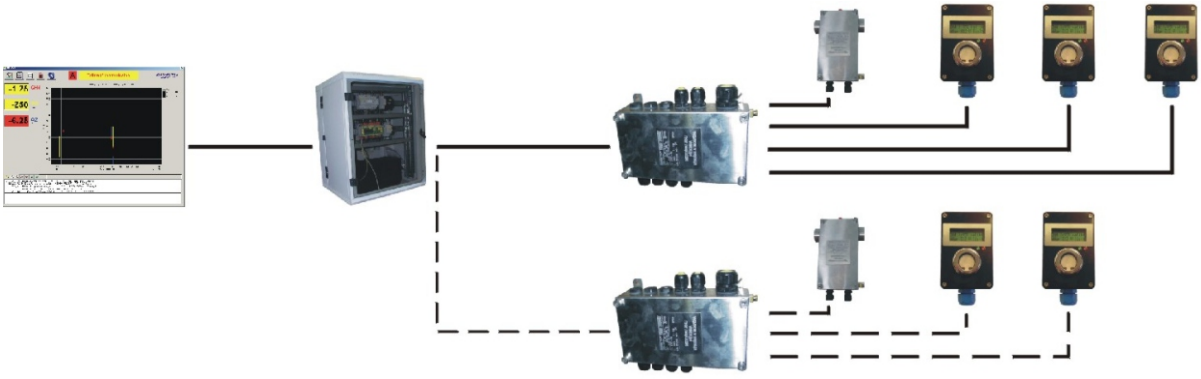
Description of MDO-01

The system is divided into surface and mine sections. The mine section consists of individual sensors (the sensor output can be e.g. 0.2-1 mA current loop), sirens and junction or distribution boxes from a range of SSEi. The surface section consists of wall-placement switchgear, which contains JB converters, an evaluation unit and backup source. The switchgear is connected to a PC with visualization software. The connection of individual parts is metallic.

The sensors must be regularly calibrated at intervals specified by the manufacturer of these sensors. The calibration must be carried out at a prescribed concentration of the gas.

* It is necessary to specify the gases monitored in the mine atmosphere and the location of the sensors (the distance between sensors and junction boxes enclosures, control room and junction boxes in the pit, switchgear and PC, etc.), and whether the PC should be supplied as part of the system.

The system operates in the mode of continuous measurement of the desired concentration of gases in the mine atmosphere. The output of the sensors is most often a current loop, which transmits information about the concentration via the junction boxes out from the mine to the IB converter inputs in the switchgear. This signal is then fed to the analog inputs of the control system. The control system provides these values through an Ethernet connection to the PC, where the appropriate visualization software is running with the option of correcting any inaccurate transmission of information about concentration, storage, etc. In the event of exceeding or falling below the required concentration, a siren located in the mine can be activated.



Example:
- Solid line: actual MDO-01 hookup
- Dashes: outline of possible enlargement

The catalogue has only those selected important parameters for your final decision. For project designs always ask for the user's guide for this product and any engineering consultation about possible uses.

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