

OXYGEN CONCENTRATION SENSOR

CSO-1



Catalogue card



DESCRIPTION

Oxygen concentration sensor CSO-1 is a stationary device for measuring oxygen content in explosion hazard areas in underground coal mines. Mainly it cooperates with telemetric central station CST-40(A) in transmission data area. It may also cooperate with other centrals provided that the terminal of the feeder-measurement line is compatible.

CSO-1 sensor provides a measuring range of 0 to 25% of oxygen. Its autonomous power supply (battery) supplies the oxygen sensor system when the supply line is disconnected. The communication with the oxygen sensor is carried out by means of digital transmission through the feeder-measurement line of the central station and through the type KR-2 calibrator. The calibrator communicates with the oxygen concentration sensor through a radio link.

The CSO-1 sensor is a device of M1 category and may thus be used in all underground mines with possible methane or coal dust explosion hazard.

Oxygen concentration sensor CSO-1 is a microprocessor device and it independently performs measurement, control and transmission functions. Its main tasks include continuous measurement of oxygen content, checking the measured value against the preset alarm thresholds, control of the contacts of the switching-off device (electronic relays). The switching-off contacts operate under positive logic, that is, supply failure, wrong measurement or overrun of alarm threshold causes the contact to open.

BASIC TECHNICAL DATA

Oxygen concentration sensor CSO-1

Supply (line current) - (current source of the supply-transmission line)	from 27 mA to 40 mA
Measurement range	0-25 % O ₂
Resolution	0,5 % O ₂
Measurement method	continuous
Response time t ₉₀	≤ 20s
Working position	any, recommended for sensor inlet downwards
Gas penetration method	through diffusion
Working time of autonomous power supply source	> 4 min
Transmission method	Digital two-way or frequency
Frequency range for measuring range 0-25% O ₂	0% O ₂ - 10kHz 25% O ₂ - 5kHz
Scaling method	Radio-transmitted by calibrator
Transmission time (of control cycle)	≤ 2s
Working temperature range	from -10 °C to + 40°C
Relative humidity range	from 15% to 95%
Dimensions	110 x 75 x 80 mm
Weight	0,6 kg
Casing internal protection	IP-54

EXPLOSION-PROOF MARK



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EC-TYPE EXAMINATION CERTIFICATE: KDB 08 ATEX 131