

METHANE DETECTOR CSM-3i



Catalogue card



DESCRIPTION

Methane Detector CSM-3i is a stationary device for measuring methane content in explosion hazard areas in underground coal mines. Mainly it cooperates with telemetric central station CST-40(A), CST-40C in transmission data area.

CSM-3i methane detector is equipped with infrared measurement chamber providing measurement in the range of 0-100% CH₄ and one or two (UW) outputs to control equipment switching off power supply when the preset alarm thresholds have been exceeded as well as two two-stage inputs to control the status of contacts and lines of connected devices. Its autonomous power supply (battery) supplies the methane sensor system when the supply line is disconnected. The communication with the methane detector 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 sensor displays the current value of methane concentration measurement.

Methane Detector CSM-3i is a microprocessor device and it independently performs measurement, control and transmission functions. Its main tasks include continuous measurement of methane content, checking the measured value against the preset alarm thresholds, control of the contacts of the switching-off device.

BASIC TECHNICAL DATA

Methane detector CSM-3i

Supply (line current) - (current source of the supply-transmission line)	40 mA
Measurement range (type of measurement)	0-100% CH ₄ (IR)
Accuracy	$\pm 0.1\%$ CH ₄ in the range 0-2.5% CH ₄ $\pm 0.3\%$ CH ₄ in the range 2.5%-5% CH ₄ $\pm 1\%$ CH ₄ in the range 5-10% CH ₄ $\pm 3\%$ CH ₄ in the range 10-100% CH ₄
Temperature error	$\pm 0,05\%$ CH ₄ / 10 °C in the range 0-5% CH ₄ $\pm 0,5\%$ CH ₄ / 10 °C in the range 5-100% CH ₄
Resolution	0.01% CH ₄ in the range 0-5% CH ₄ 1 % CH ₄ in the range 5-100% CH ₄
Measurement method	IR, continuous
Response time t_{90}	$\leq 25s$
Working position of the methane detector	measuring sensor pointing downwards
Gas penetration method	through diffusion
Working time of autonomous power supply source	4 min
Type of transmission	digital, two-way
Scaling method	by calibrator
Transmission time (of control cycle)	$\leq 2 s$
Working temperature range	from -10 °C to + 40 °C
Relative humidity range	from 0% to 95% without condensation
External dimensions	160 x 75 x 78 mm
Weight	1,2 kg
Casing internal protection	IP-54

EXPLOSION-PROOF MARK



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EC type examination certificate: KDB 09 ATEX 094