

# GAS CONCENTRATION SENSOR

CSHS-1 CSSD-1 CSNO-1, CSND-1



Catalogue card



## DESCRIPTION

Gas concentration sensor is a stationary devices, depending on the type it can measure following gases: hydrogen sulphide (CSHS-1), sulfur dioxide (CSSD-1), nitrogen oxide (CSNO-1) or nitrogen dioxide (CSND-1) in explosion hazard areas in underground coal mines. Mainly it cooperates with telemetric central station CST-40(A), CST-40C in transmission data area. It may also cooperate with other centrals provided that the terminal of the feeder-measurement line is compatible.

The sensor has one output (UW) used to control the switching energy device when the preset alarm thresholds have been exceeded.

Its autonomous power supply (battery) supplies the sensor system when the supply line is disconnected. The communication with the sensor is carried out by means of digital or frequency transmission through the feeder-measurement line of the central station and through the type KR-2 calibrator. The calibrator communicates with the sensor through a radio link.

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

## BASIC TECHNICAL PARAMETERS

### Gas concentration sensor CSHS-1, CSSD-1, CSNO-1, CSND-1

Power supply	from 27 mA to 40 mA (current source of the supply – transmission line)
Measuring range (depend on type)	0 – 200,0 ppm H <sub>2</sub> S (CSHS-1) 0 – 100,0 ppm SO <sub>2</sub> (CSSD-1) 0 – 250,0 ppm NO (CSNO-1) 0 – 20,00 ppm NO <sub>2</sub> (CSND-1)
Precision (depend on type)	CSHS-1: ±1 ppm or ±1% measured value - take greater value CSSD-1: ±0,5 ppm or ±1% measured value - take greater value CSNO-1: ± 1 ppm or ±1% measured value - take greater value CSND- 1: ± 0,2 ppm or ±1% measured value - take greater value
Measurement resolution	0,1 ppm (CSSD-1, CSNO-1, CSHS-1) 0,01 ppm (CSND-1)
Measurement method	continuous
The cycle time of the sensor	max. 500ms
Response time t <sub>90</sub>	≤ 40s
Transmission mode	Digital two-way or frequency 10kHz ÷ 5kHz (linear)
Working position	Sensor inlet from the side or the bottom (recommended)
Scaling method and configuration	Calibrator KR-2
Working temperature range	from -10 °C to + 40 °C
Relative humidity range	from 15% to 95% without condensation
External dimensions	110 x 75 x 80 mm
Weight	0,65 kg
Casing internal protection	IP-54
Parameters: - Power supply line - UW „contact with diode”	U <sub>i</sub> = 54 V li = 150 mA Pi = 3,3 W U <sub>i</sub> = 24 V li = 100 mA Pi = 0,25 W

## EXPLOSION-PROOF MARK



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EC type examination certificate: KDB 08 ATEX 131