Carbon dioxide system sensor SC-CO_2/*

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Use:
The carbon dioxide system sensor SC-CO2/* has been designed for continuous monitoring of carbon dioxide concentration within the range of 0–5 % and it has been adapted for operation in telemetric systems as well as a stationary unit for continuous measuring of environment parameters underground and on the surface of mining plants within areas subject to methane and/or carbon dust explosion hazard.

Description:
Sensors of SC-CO2/* can be operated in systems:
- with FSK digital signal;
- with voltage signal of 0.4–2 V;
- with coded signal of 5–12 kHz frequency.

When the measuring process is in progress, the sensor can operate in a single selected system, i.e. transmission standard, only.

The carbon dioxide system sensor SC-CO2/* operates in stationary unit mode and it can be powered form an intrinsically safe power supply unit or an intrinsically safe supply-transmission line of methane measuring system.

The sensor for CO2 works as a double-threshold shut down unit which enables control of external devices using 2 binary leads (galvanically separated). It also features one binary output for cooperation with voltage-free contact.

Two alarm thresholds can be set to any value within 0–1 % of Co2.

Any excess or drop below an alarm threshold will activate the alarm, i.e. flashing of red LED and status change at a particular sensor output (or outputs).

Proper operation is confirmed by green LED.

Two programmable alarm thresholds.
Optional operation in three transmission standards.
Protection against interference by unauthorised personnel (calibration, configuration) .

Power supply	- telemetric exchange line Ui = 60 V, Ii = 150 mA with intrinsic safety - power supply unit U = 15 V; I = ~35 mA with intrinsic safety
Version	SC-CO_2n – basic version SC-CO_2/n – special version – modified software
Output signal	- frequency 5–12 kHz - digital FSK - voltage 0.4–2 V
Operation principle – diffusive penetration of gas into head	measuring based on the principle of infra-red radiation absorption
Measuring ranges	0–5 % of CO_2 (n and s version)
Accuracy of sensor	- 0.1 % CO_2 (range 0 - 2.5 % CO_2) - 0.3 % CO_2 (range 2.5 - 5 % CO_2)
Resolution	0.3% of CO_2 (range 2.5 – 5 % of CO_2)
Measuring method	continuous
Response time T90	≤ 30 seconds
Airflow rate	up to 10 m/s
Humidity	< 95 %, no condensation
Dust contents in environment	max. 1000 mg/m^3
Jolts and vibrations	Unacceptable
Operation temperature and temperature of gas mixture subject to measurement	-20 ≤ Tamb ≤ 40 °C
Protection level	I M1 Ex ia I II 2G Ex ia IIA T4
Protection	IP54
Action time of relay AL1, AL2	under 1 second
External dimensions	175 x 80 x 90 mm
Weight	0.9 kg

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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