SAFDY CO GAS DETECTOR

MODEL SCO11 (200ppm)

The Safdy range of CO gas detectors are used in the mining environment to continuously detect CO gas. The Safdy CO connects to a Telemetry System and displays the information on software Scada package.

DESCRIPTION

- Remote sensing head for continuously monitoring CO Gas up to 200ppm.
- Designed to be interfaced to a remote Telemetry System.
- The output of the CO detector can be displayed as a trend graph on a Scada software program.
- Originally designed for the South African mining industry, specifically to monitor underground in the gold, coal or diamond mine, but can also be used for Industrial applications.
- CO cell designed for maximum range of up to 2,000ppm.
- Linear output proportional to amount of ppm CO gas.
- Highly accurate, dependant on the sensitivity of the CO cell.
- Span calibration is done via internal twirl-pot – zero is fixed.
- Rapid response of change of detected CO.
- Very low lifecycle costs – replacement of the CO cell.
- No external settings.
- Output is a standard 4 – 20mA.
- Alternatively, it can be used on the Anglo system as a 0-1mA output.

TEST CERTIFICATES AND APPROVALS

- Intrinsically safe for use in coalmines.
- Explo-Labs approved for explosion proof.

CONSTRUCTION

- The electrolyte, dilute sulphuric acid, is contained in a cylindrical poly-carbonate cell. A Teflon diffusion membrane, which allows the passage of gas but not liquid, is situated at one end of the cylinder. The inner, liquid side of the membrane is coated with a thin film of platinum, which forms the active electrode. Two additional electrodes of platinum on Teflon complete the circuit. All three electrodes are in a single sandwiched pack.

- Surface mount design PCB electronics.
- Proven way to measure CO fairly accurately.
- The CO sensor and electronics are housed in a stainless steel box.
- The lifespan of the CO cell can be in excess of two years.

METHOD OF OPERATION

- When air containing carbon monoxide passes through the membrane, catalytic reaction on the platinum electrode converts the carbon monoxide to carbon dioxide. This process generates an electric current directly proportional to the absolute number of CO molecules.
- The output is therefore 4mA at zero CO concentration increasing linearly to 20mA at 200ppm CO.
- An alternate output is 0,2mA at zero CO gas and 1mA for 200ppm CO gas.
- The sensitivity of the cell is affected by temperature. Because of this, the instrument is not intended to be used as a precise gas analyser but just as a gas detector.
- The detector is not fail safe.
- In areas where blasting takes place, with a concomitant fluctuation in CO levels, signal deviations provide an indication of detector function.
- When the detector is used in areas with no CO background variation, the unit needs to be tested for sensitivity more often, as the electrolyte is used up by the CO gas.

TECHNICAL DATA

Supply voltage	7 to 24V DC
Power consumption	2mA + loop current (4-20mA)
Range normal	0ppm - 200ppm
Other ranges	Electronic Selectable to 2,000ppm.
Output	4mA to 20mA (standard) 0mA to 1mA (alternate)
Housing	Stainless steel powder coated orange
Classification No	XPL/5781/03337
IA Classification	Ex ia I/IIB T4
Dimension	75 x 60 x 120mm
Weight	600 gram

HIGH RANGE CO DETECTOR

Other ranges of CO detectors can be supplied. Popular ranges are 500ppm and 1,000ppm.

Alternatively, a very high range CO detector can be supplied. Ranges from 10,000ppm up to 1000,000ppm.

APPLICATION SPECIFICATIONS

PRICE	Safdy CO is competitively priced
	No extra costs for specialised Junction Box
	Wire to standard PRATLEY box
PLUG 'N PLAY	Schaltbau connector male to female coupling
	First time wiring only
	Detector Simulator plug 'n play on same connector
DESIGN	The pcb design is as such that the CO cell is short circuit upon power off, thus the cell is stored in REST state.
	All components are SMD and triple conformal coated
	Designed to strict intrinsic safe standards (Ex ia approved)
CALIBRATION	All ZERO and SPAN calibrations are done under lab conditions
	No external ZERO calibration pots to tamper with
SUPPLY	Supply voltage from 7Vdc to 24Vdc
	Standard PLC 3-wire +24V and 4-20mA output
INTERFACE	4-20mA PLC interface or
	0-1mA interface for Anglo system
	Plug 'n Play on interface cards – no change to detector
CO RESPONSE	10 second response time on power up
	5 second response to CO gas