

Model 48C CO Analyzer

Gas Filter Correlation analyzer for ambient air monitoring and source emissions monitoring

For High Sensitivity Air Monitoring

The Model 48C Gas Filter Correlation (GFC) CO Analyzer measure low CO concentrations. It combines proven detection technology, easy-to-use menu-driven software and advanced diagnostics to offer unsurpassed flexibility and reliability.

The Model 48C is based on the principle that carbon monoxide (CO) absorbs infrared radiation at a wavelength of 4.6 microns. Because infrared absorption is a nonlinear measurement technique, it is necessary for the instrument electronics to transform the basic analyzer signal into a linear output. The Model 48C uses an exact calibration curve to accurately linearize the instrument output over any range up to a concentration of 10,000ppm.

The sample is drawn into the analyzer through the SAMPLE bulkhead. The sample flows through the optical bench. Radiation from an infrared source is chopped and then passed through a gas filter alternating between CO and N₂. The radiation then passes through a narrow bandpass interference and enters the optical bench where absorption by the sample gas occurs. The infrared radiation then exits the optical bench and falls on an infrared detector.

Key Features

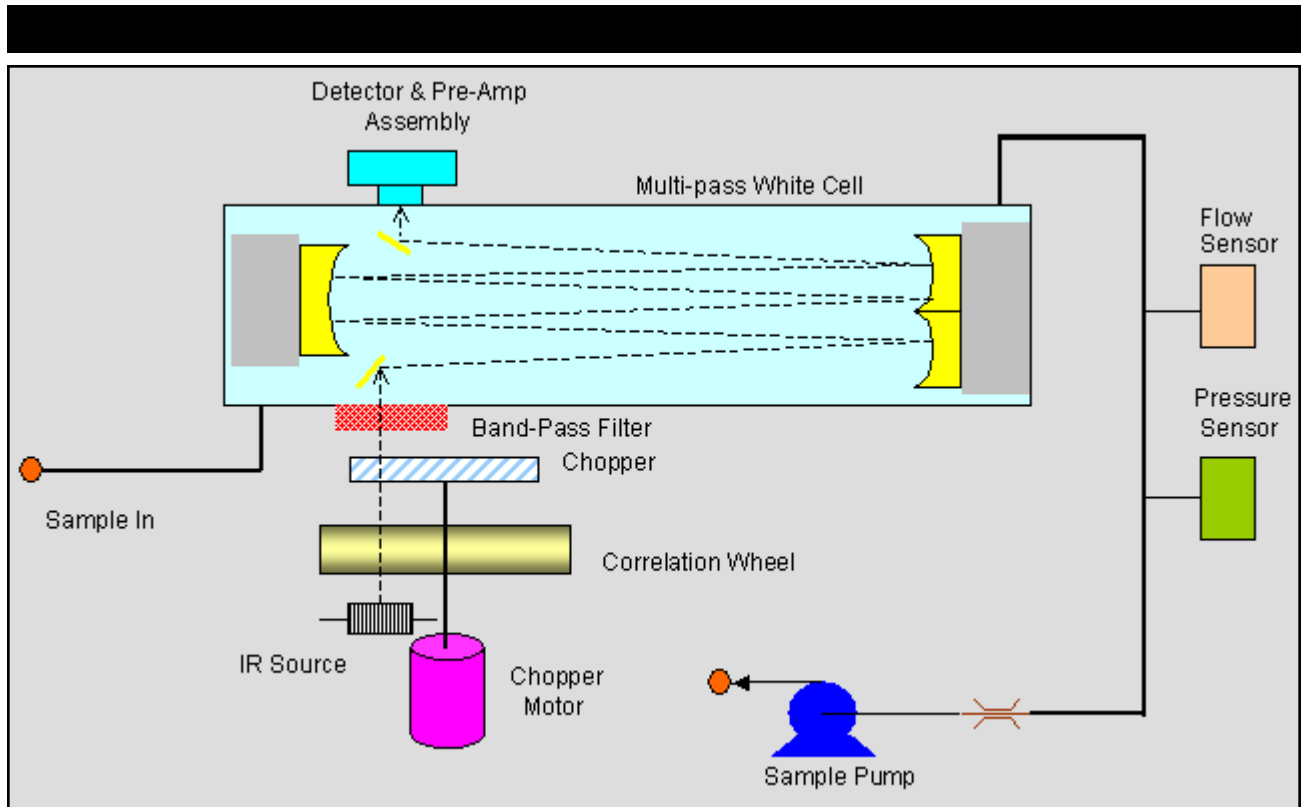
- ◆ U.S. EPA Designated Method (RFCA-0981-054)
- ◆ Gas filter correlation selectivity
- ◆ Highly specific to CO
- ◆ Electronic diagnostic transducers
- ◆ Multi-line alpha numeric display
- ◆ Dedicated communications processor
- ◆ Remote performance diagnostics
- ◆ Self aligning optics



Preset Ranges	0-1, 2, 5, 10, 20, 50, 100, 200, 500, 1000, 2000, 5000 and 10000 ppm 0-1, 2, 5, 10, 20, 50, 100, 200, 500, 1000, 2000, 5000 and 10000mg/m ³
Custom Ranges	0-1 to 10000 ppm 0-1 to 10000 mg/m ³
Zero Noise	0.02 ppm RMS (30 second time setting)
Lower Detectable Limit	0.04 ppm
Zero Drift (24 hour)	<0.1 ppm
Span Drift (24 hour)	+/-1% full scale
Response Time	60 seconds (30 second time setting)
Precision	+/-0.1 ppm
Linearity	+/-1% full scale ≤ 1000 ppm +/-2.5% full scale > 1000 ppm
Sample Flow Rate	0.5-2 liters/min.
Operating Temperature	20°C - 30°C
Power Requirements	105-125 VAC @ 50/60Hz 220-240 VAC @ 50/60Hz 100 Watts
Size and Weight	16.75" (W) x 8.62" (H) x 23" (D), 45 lbs.
Outputs	Selectable voltages and RS-232 (standard) 4-20 mA isolated current RS-485 (optional)

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Model 48C Flow Diagram



The CO gas filter acts to produce a reference beam which cannot be further attenuated by CO in the sample cell. The N₂ side of the filter wheel transparent to the infrared radiation and therefore produces a measure beam which can be absorbed by CO in the cell.

The chopped detector signal is modulated by the alternation between the two gas filters with an amplitude related to the concentration of CO in the sample cell. Other gases do not cause modulated by the detector signal since they absorb the reference and measure beams equally. Thus the GFC system responds specifically to CO.



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