

# IR Gas Filter Correlation Carbon Monoxide Analyzer Model CO12M

Low level monitoring  
of CO from  
50 ppb to 200 ppm

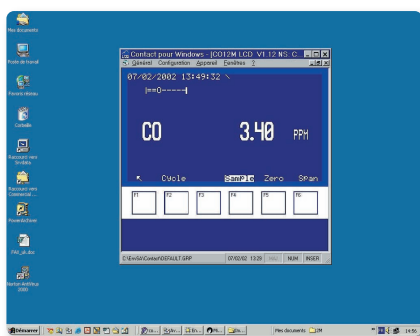


## 2M Series analyzer

- Ultra compact and light – rack 3U
- Modular design
- SMD enhanced electronics
- High precision metrology
- Enhanced data logging functions
- Complies with ISO 4224, EN 14626 and VDI 4202

## Reduced maintenance

- Ease and accessibility of components
- Traceability of parts and consumables
- Sealed gas cells, guaranteed against leaks
- Remote maintenance and telediagnosics



CONTACT remote control software



## Major fields of applications:

- Ambient air monitoring
- Indoor air monitoring
- Mobile laboratory
- Continuous emissions monitoring (CEM) by dilution

## Exclusive features:

- Type approvals: TÜV report n° 936/21206773/B (Germany), US EPA n° RFCA-0206-147 (USA)
- Graphic Liquid Crystal (LCD) display
- Interactive menu-driven software with enhanced speed display
- Real-time synoptic flow diagram display
- User programmable ranges and average times
- Auto-ranging
- Automatic response time
- Real time calibration graph
- User programmable ranges and average times
- Built-in serial interface (RS 2322 / RS 422)
- Built-in storage of two months average data (up to 1 year with the optional memory extension)
- Full remote emulation of the analyzer

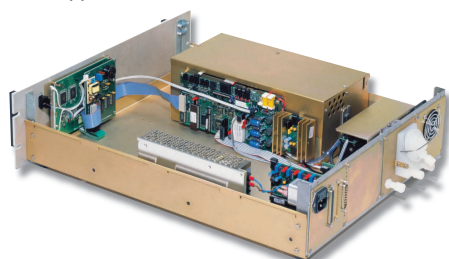
# IR Gas Filter Correlation Carbon Monoxide Analyzer - model CO12M

## Specifications:

- Ranges: 0-10/ 25 / 50 /100 / 200 ppm or user selectable ranges
- Autoranging between two-user specified ranges
- Noise ( $\sigma$ ): 25 ppb
- Lower detectable limit ( $2\sigma$ ): 50 ppb
- Response time: automatic and programmable (minimum 30 sec)
- Zero drift: less than 0.1 ppm / 24 h  
less than 0.1 ppm / 7 days
- Span drift: less than 1% / 24 h  
less than 1% / 7 days
- Interference rejection ratio:
  - H<sub>2</sub>O: less than 1/200 000
  - CO<sub>2</sub>: less than 1/70 000
- Linearit :  $\pm 1\%$  of F.S.
- Pressure and temperature compensation
- Internal sample pump
- Sample flow rate: 1 lpm
- Averaging time: programmable from 1 min. to 24h
- Data storage: more than 2 months 1/4 h average values
- Chassis: 19" rack mountable, 3U
- Dimensions (L x W x H): 545 mm x 483 mm x 133 mm
- Weight: 8 kg (17 lbs)
- Power: 115 V, 60 Hz - 230 V, 50 Hz
- Power consumption: 50 VA
- Operating temperature: 5 – 40 °C (typical as per US EPA 10 - 35° C)
- Digital output: 2 RS 232 or RS 422 ports
- PVDF sample filter holder
- Valves block for selection of customer – supplied zero and span gas

## Options:

- Memory extension
- Ethernet network connection
- ESTEL electronic board (1 or 2) with:
  - 4 independent analog inputs
  - 4 independent analog outputs
  - 4 remote control inputs
  - 6 dry contacts outputs
- SOREL electronic board with:
  - 4 dry contacts outputs
  - 4 dry contacts inputs
- CO<sub>2</sub> measurement in ambient air
- CO/CO<sub>2</sub> measurement in ambient air
- Wall mounted weather proof enclosure
- 24V DC power supply for on-board applications



## Principle of operation :

The new NDIR GFC (Non Dispersive InfraRed Gas Filter Correlation) carbon monoxide analyzer, model CO12M, combines over 20 years of experience in the NDIR CO measurement with an enhanced electronics package and a modular component parts design.

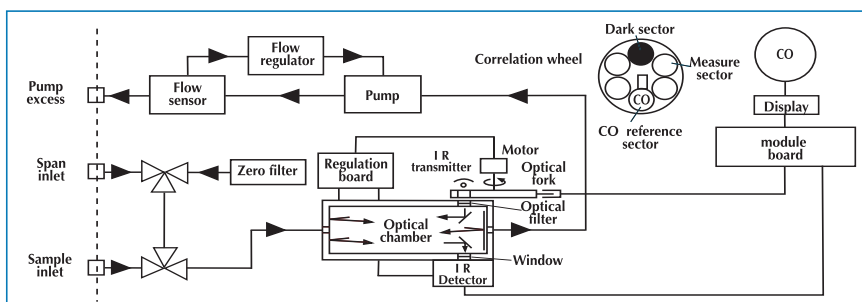
The outcome is an ultra compact and light – rack 3U, easy-to-use, IR GFC based analyzer able to measure carbon monoxide with an excellent stability and accuracy.

The CO sample concentration is determined by measuring how much infrared light the sample gas absorbs as it flows through a multi-cell correlation wheel filled on one side with a reference CO cell (reference beam) and on the other side with an empty cell (the measurement beam). As the wheel turns round, the light beam passes alternatively through the CO cell and the empty cell and then through an interference optical filter before reaching the optical detector. If the sample contains CO, the reference beam will not be attenuated by it because it was already attenuated by the CO of the reference cell. The measurement beam however will be attenuated by the CO in the sample.

The analyzer was developed to meet customers' requirement for reduced and easier maintenance. Equipped with sealed gas cells located in the airtight thermo-regulated measurement module, the CO12M combines a powerful, easy-to-use interface with state-of-the-art components and design technology.

Real-time calibration graphs can be displayed during span check operation. Multi-tasking software allowing advanced calculation such as wind direction averaging, combined with the LCD graphic display, gives a user-friendly access to the instrument set-up, as well as the status and maintenance parameters. Real-time synoptic, auto-diagnostic and maintenance data screens can be displayed while the instrument is operating. The new electronics allow enhanced data storage of more than two months of 15 minute averages and total remote troubleshooting diagnostic capabilities via modem, using the analyzer complete display and functions emulation.

Equipped with the optional ESTEL I/O analog & digital board, the CO12M can be easily interfaced with other equipment and can be operated as a stand alone unit able to store several months of data.



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